

TIM RIPLEY



AIR WAR AFGHANISTAN

US AND NATO AIR OPERATIONS
FROM 2001



This book provides an overview of NATO and other Allied air power in the lengthy campaign to secure democracy in Afghanistan and destroy Taliban and other Islamic extremist terror forces in the combat zone. It contains a mix of explanatory text, diagrams and stunning action colour photography. Tim Ripley has had access to all NATO air bases in the area and brings an unprecedented degree of detail and accuracy to the book.



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US and NATO Air Operations
from 2001

Tim Ripley



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Kandahar Airfield

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Brigadier Ed Butler, Commander 16 Air Assault Brigade, Captain Marcus Eves, S02 Media Ops 16 Brigade

Kabul

Maj Gen Chris Wilson, ISAF Deputy Commander, ISAF Spokesman, Mark Laity

CAOC Al Udeid

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Introduction

Afghanistan has been blighted by conflict since the late 1970s. The Central Asian country has suffered from at least two foreign invasions, numerous covert interventions and almost incessant civil war since 1979. For the first decade of the twenty-first century, Afghanistan and border regions of neighbouring Pakistan have been the key battlegrounds in the conflict between radical Islam and the United States of America, supported by its allies.

In each of the conflicts that have engulfed Afghanistan over the past forty years, airpower has regularly played a central and decisive role. During December 1979, the advanced guard of the Soviet invasion force arrived largely by air and seized control of key points throughout the country. Waves of Soviet transport planes delivered airborne troops and light armoured vehicles to capture strategic government buildings and air bases. For almost a decade, the Soviet Army relied on the full range of airpower – strategic bombers, fighter bombers, airlift, reconnaissance, transport and attack helicopters – to support its counter-insurgency campaign against mujahideen insurgents. The Soviets pulled out in 1989 and left Afghanistan to its fate.

During the 1990s, Afghanistan was ravaged by civil war as warlords and armed bands fought for control of the country. The remnants of the Soviet-era air force at various times fought alongside the country's warlords in confusing and bloody battles that set Afghanistan on a spiral of despair and destruction. Aircraft and helicopters were used by all of Afghanistan's warlords to help them in their battles and to secure their hold on power.

The emergence of the Taliban regime in late 1990s brought a peace of sorts but the country became increasingly isolated. The Taliban in turn 'acquired' what was left of the old Afghan air force, although many of its personnel only served because of threats to their families by the new hard-line Islamic government. The arrival in Taliban-controlled Afghanistan of followers of

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Osama bin Laden set in train a series of events that would eventually lead to US intervention. Deadly attacks by bin Laden supporters of his Al Qaeda group on US embassies in East Africa in August 1998 brought a shower of Tomahawk cruise missiles against what President Bill Clinton called a 'network of terrorist bases' inside Afghanistan.

The attacks on 11 September 2001 on New York and Washington DC, brought decisive US intervention against the Taliban and Al Qaeda. Waves of US aircraft and missiles smashed what was left of the Afghan air force and air defences, before US special forces teams joined forces with anti-Taliban warlords to drive the Mullah Omar's regime from power in only a few weeks.

US-led coalition forces, backed by ground-attack aircraft and attack helicopters, then spread out across Afghanistan, trying to hunt down and destroy the remnants of the old regime and its Al Qaeda allies. For almost four years Afghanistan seemed strangely peaceful. It seemed as if the Taliban and Al Qaeda had disappeared into thin air.

With the insurgency in Iraq raging out of control, the US government wanted to run down its forces in Afghanistan to allow them to be transferred to fight around Baghdad. Plans were hatched to transfer security responsibility for Afghanistan to NATO.

When NATO troops started to relieve US troops in south-west Afghanistan in the spring of 2006, the Taliban struck back. Isolated detachments of

A fully armed MQ-9 Reaper unmanned aerial vehicle (UAV) taxis down Bagram Air Base runway. The advanced version of the famous Predator (UAV) completed its first combat strike in Afghanistan on 27 October 2007, when it fired a Hellfire missile at a target near Deh Rawod. (USAF/Staff Sgt Brian Ferguson)





This AH-64A Apache helicopter hovers while approaching a forward arming and refuelling point in the Orgun province of Afghanistan. The machine is the workhorse of US, British and Dutch attack helicopter forces in Afghanistan. (US Army Sgt 1st Class Fred Gurwell)

British, Canadian and Dutch troops found themselves fighting a series of desperate battles against thousands of heavily armed Taliban fighters. NATO strike aircraft, armed unmanned aerial vehicles (UAVs) and attack helicopters kept the waves of fighters at bay, while helicopters and C-130 transports dropped vital supplies to the besieged enclaves.

Since then, southern Afghanistan has been ravaged by fighting between the Taliban and NATO troops. Fighting spread across most of southern Afghanistan astride the Pakistan border known as the 'Pashtun belt' after the predominant tribal group in the region. As the position of the Kabul government became increasingly precarious, the US and its NATO allies began to deploy thousands of extra troops and a growing array of airpower to counteract the Taliban wave.

Missile-armed UAVs hunted down Taliban and Al Qaeda leaders in Afghanistan and Pakistan; close air-support jets and attack helicopters protected NATO troops; transport helicopters moved NATO assault forces deep into enemy territory; and huge fleets of transport planes kept the growing NATO garrison in land-locked Afghanistan supplied.

Military forces in Afghanistan – of a variety of political allegiances – over the years have relied on airpower for a number of reasons. Afghanistan's



A USAF F-15E Strike Eagle aircraft shows its impressive weapons after air-to-air refuelling during a mission to provide close-air support to coalition troops on the ground. (USAF/Master Sgt Lance Cheung)

high mountains, deep valleys, unforgiving deserts and almost non-existent road and bridge infra-structure mean that the only way to move quickly around the country is by air. This means that whoever controls the air-space over Afghanistan can rapidly bring military power to bear, either by delivering ground forces and their supplies or by conducting air strikes. Air surveillance is also an important means to gain reliable information about what is happening across the country.

Afghanistan's land-locked location, surrounded by politically unstable and heavily armed neighbours, means that foreign intervention forces have to rely on air transport to enter the country and sustain their forces.

The application of airpower is not a panacea for those trying to intervene in Afghanistan. The logistics of projecting airpower over Afghanistan are

immense. The political problems that inhibit the movement of large land forces into the country also impact on air operations and the Americans found in 2001 that they needed to make extensive use of air-to-air refuelling to sustain their strategic air offensive against the Taliban.

As US-led forces built up their presence in Afghanistan, an increasing number of air bases were opened to allow in-country air assets to provide rapid support to ground units. This growing armada of jets and helicopters, however, has had to rely on precarious land convoys to bring fuel into Afghanistan from Pakistani ports.

Afghanistan has a well-deserved reputation for being one of the world's most demanding environments to fly both fixed-wing aircraft and helicopters. A combination of Afghanistan's hot temperatures, height above sea level and desert dust means pilots can take little for granted. The country's high mountain ranges and vast deserts offer very different challenges to aviators.

US Marine Corps KC-130R airlifters spearheaded the landing of combat forces at FOB Rhino in southern Afghanistan in November 2001. (USMC)





A Royal Netherlands Air Force Cougar drops off Dutch engineers at Forward Operations Base Martello in Kandahar province during a reconstruction mission, illustrating the demanding near 'brown-out' conditions routinely experienced by NATO helicopter pilots. (CMND/Sergeant Dennis Power)

A highly experienced US Air Force helicopter pilot who flew in southern Afghanistan during the summer of 2006 rated the country's environment as a far more dangerous threat than the enemy. 'The enemy are number eight on my list of threats,' said the pilot. 'The biggest threat is Afghanistan itself – the altitude, heat, darkness, brown out and weather.'

The centre of Afghanistan is dominated by a series of mountain ranges that rise to more than 10,000 feet above sea level, which makes it very difficult for even the most powerful aircraft and helicopter to operate over, particularly in the country's hot summer heat. In such conditions, pilots have to carefully judge their speed to ensure they have the power to rise above dangerous terrain. It also greatly limits the cargo that can be carried in the summer months.

Down in the desert of Helmand and Kandahar provinces, the fine dust that is thrown up by landing helicopters' rotor blades can blind pilots just as they are about to touch down, leading to a dangerous loss of situational awareness and causing even the most experienced pilots to accidentally fly into the ground. Known as 'brown outs', these conditions mean helicopter pilots have to carefully judge their final approaches to landing zones. The risks involved are greatly complicated if the enemy opens fire and prompts helicopter pilots to take rapid evasive action.

Afghanistan's darkness is also a major threat to nocturnal air operations because of the lack of ambient light from towns or street lighting. This seriously degrades the performance of the night vision goggles used by many pilots in Afghanistan to fly at night by making it difficult to spot the ground.

The next major challenge for airpower is the location of suitable targets to attack. In the early days of the US intervention in 2001, the major problem was finding fleeting targets in remote rural areas and caves. Towards the

Canadian Forces Griffon and Chinook helicopters fly in formation during the opening phase of Operation Moshtarak in February 2010. Their mission was to insert British, Estonian and Afghan troops into the village of Nad-e-Ali, an insurgent strongpoint in Helmand province. (CMND/Master Corporal Craig Wiggins)



end of the decade, the growing urbanization of Afghanistan brought the challenge of differentiating between insurgents and innocent civilians mingled in built-up areas.

The application of airpower has proved decisive at several points in Afghanistan's recent history. However, it is clear that while airpower can wreak great destructive power and provide decisive military advantage, it is not able by itself to win the support of the Afghan people. This factor may prove decisive in judging the long-term success of the US and NATO's military campaign in Afghanistan.

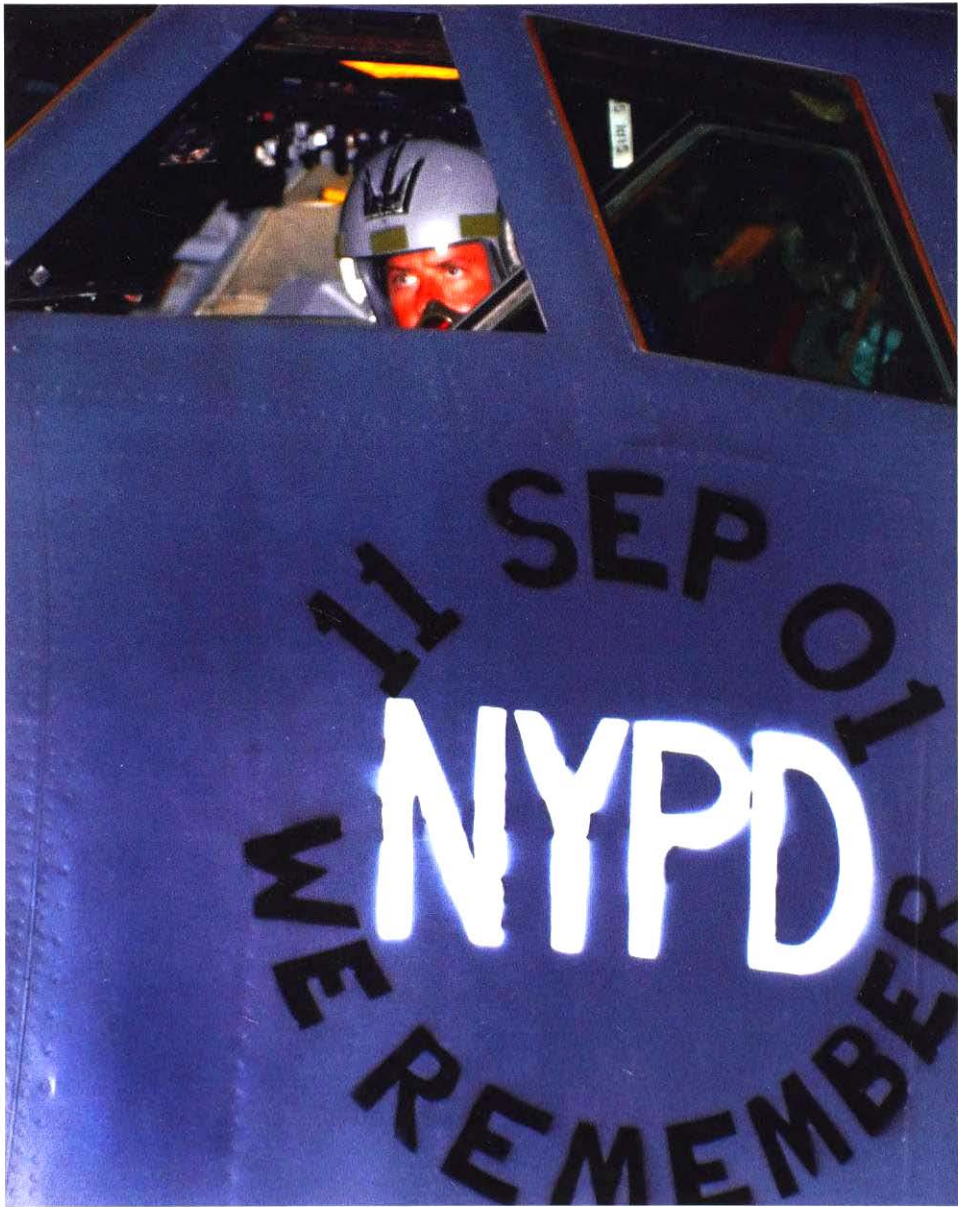
Chapter 1

Target Afghanistan

After hijacked airliners flew into the Twin Towers of the World Trade Center in New York on the morning of 11 September 2001, the clock started ticking for the United States of America to launch a military response against the mastermind of the attacks and his supporters in Afghanistan. US President George W Bush ordered his military commanders to prepare wide-ranging plans to attack the bases of Osama bin Laden's Al Qaeda

Firefighters and Urban Search and Rescue workers battle smouldering fires and search for survivors at the World Trade Center in New York in the aftermath of the 9/11 attack. (Photo by Andrea Booher/FEMA News Photo)





A USAF B-52H Stratofortress bomber pilot conducts preflight checks before launching on a night mission over Afghanistan in support of Operation Enduring Freedom. (USAF/SSgt Larry A. Simmons)

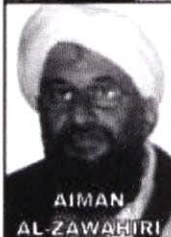
FRONT



BACK

PUSHTO

UP TO A \$25,000,000
REWARD FOR
INFORMATION
LEADING TO
THE WHEREABOUTS
OR CAPTURE OF
THESE TWO MEN.



DARI

UP TO A \$25,000,000
REWARD FOR
INFORMATION
LEADING TO
THE WHEREABOUTS
OR CAPTURE OF
THESE TWO MEN.

The Federal Bureau of Investigation wanted posters for Osama bin Laden issued following the 9/11 attacks on New York and Washington DC. (FBI)



Smokes rises from the nerve centre of the US military after a hijacked commercial jetliner crashed into the Pentagon on 11 September 2001. (USAF/TSgt Jim Varhegyi)

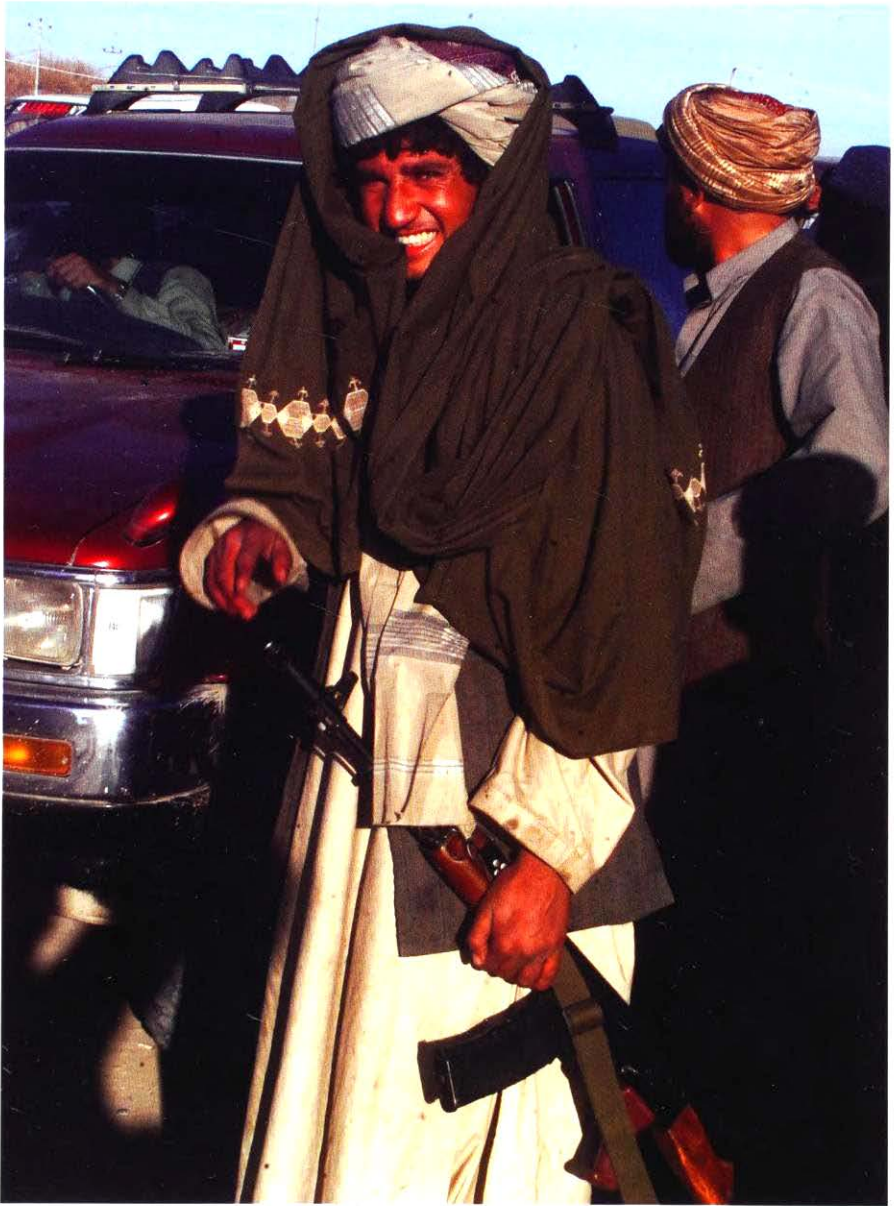
organization in Afghanistan. He wanted the US military to topple the Taliban regime that was providing shelter for bin Laden and remove for ever the prospect of Al Qaeda using Afghanistan as a 'safe haven' to prepare attacks against America and its allies.

For American military planners, Afghanistan was a very difficult target. The country was land-locked and surrounded by countries that all owed few allegiances to America or, in the case of Iran, were openly hostile to Washington. Although nominally the government of Afghanistan, the Taliban regime had few of the attributes of a conventional state. It was more of a guerrilla band than a government.

The Taliban armed forces were a mix of conventional and guerrilla forces. The regime had taken over control of the remnants of the old Soviet-era Afghan army and air force. The latter force still occupied several large air bases around the country and a rudimentary network of air defence radars, anti-aircraft artillery (AAA) guns and ground-based surface-to-air missile (SAM) batteries. It boasted a force of several dozen Mikoyan MiG-21 air defence fighters and Sukhoi Su-22 ground attack jets, as well as a selection of Antonov transport aircraft, Mil Mi-24 attack helicopters and Mil Mi-8/17 transport helicopters. The serviceability of these aircraft and helicopters was



Two F-16A Fighting Falcons from the North Dakota Air National Guard's 178th Fighter Squadron lead an F-15C Eagle from the USAF's 27th Fighter Squadron in formation during the combat air patrol mission, dubbed Operation Noble Eagle, over US cities in the weeks following 9/11. (USAF/Staff Sgt Greg L. Davis)



An Afghan fighter awaits the arrival of US troops in the country's second city, Kandahar, in December 2001 after the fall from power of the Taliban regime. (USMC/Sgt Joseph R. Chenelly)



Soviet era Mil Mi-24 attack helicopters were the mainstay of the Afghan air force during the 1990s. (USAF)

questionable and the Afghan air force had received few spares since the Soviets pulled out in 1989. Although most of the air and ground crews had received training from the Soviets, they had had little chance to practise their skills since then. The best pilots were in the Mi-8/17 and Antonov units.

The Taliban regime also controlled the state-owned Ariana Afghan Airlines, which was a key element in linking the government in Kabul with its hard-line supporters in the Arabian Gulf and Pakistan. One of its Boeing 727 airliners was hijacked to Stansted Airport in the UK in 2000.

The Taliban ground force was made up of a mix of conventional units, ultra-loyal fighters drawn from Islamic schools known as madrasas and locally recruited tribal militia. While the conventional units of the old Soviet-era army were the most heavily equipped with tanks, armoured vehicles and heavy artillery, they were regarded with suspicion by the Taliban regime and kept under close scrutiny. Likewise, the local militia fighters who the Taliban hired from tribal elders to fight alongside them were often only willing to operate in their own tribal area. They also had few heavy weapons and armoured vehicles.

The core of the Taliban military was its bands of ultra-loyal fighters. Most had been indoctrinated in madrasas around the movement's spiritual home in Kandahar or refugee camps in Pakistan. These fighting bands were

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highly mobile in heavily armed pick-up trucks or sports utility vehicles (SUVs). Each band was often supported by a handful of tanks and artillery pieces so they could mount rapid assault operations. Often they had man-portable surface-to-air missiles or Manpads to provide low-level air defence. In Afghanistan's wars during the 1990s, the Taliban proved a powerful military force because they were able to rapidly move their troops around the country to strike decisively at their enemies. Their biggest advantage was the morale and determination of their fighters, whereas their opponents were often mercenary forces who would only fight with vigour on their home territory.

The Taliban were almost exclusively drawn from Pashtun tribes from the south of the country so they also had strong tribal loyalty. This also ensured they were viewed as allies by the Pakistani government and its shadowy spy arm, the Inter-Services Intelligence (ISI) organization.

Allied to the Taliban were the 20,000 or so fighters of the Al Qaeda organization who were based around Afghanistan. These foreign fighters were drawn mainly from Yemen, the Arabian Gulf states and Uzbekistan, but some came from as further afield as Europe, North Africa, China and

The only fighters the Afghan air force had in 2001 were ancient ex-Soviet MiG-21s and only a few dozen were near combat-ready status. (US Navy/Photographer's Mate 1st Class Arlo K. Abrahamson)





General Tommy Franks was the Commander-in-Chief of US Central Command between 2001 and 2003 and led the US response to 9/11, as well as the invasion of Iraq. (USAF/Tech. Sgt Steve Faulisi)

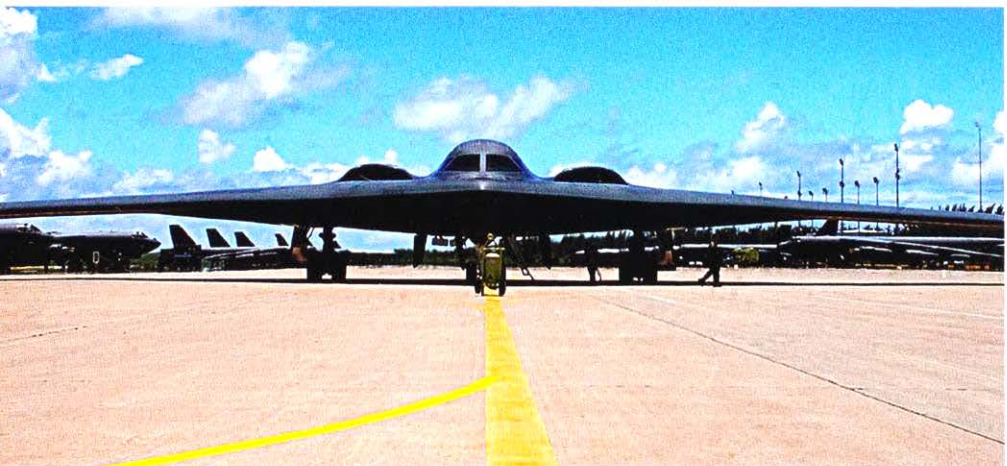
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a handful from North America and Australia. These were organized on similar lines to the Taliban fighting bands and one large unit, the 55 Brigade, was dispatched to northern Afghanistan to fight against their opponents, the so-called Northern Alliance. The bulk of the Al Qaeda personnel was based in a network of camps and safe houses around the cities of Kabul, Kandahar, Jalalabad and the mountainous Tora Bora region. The Uzbeks were considered the best trained and organized fighting units of Al Qaeda.

By the turn of the decade, the Taliban had driven their opponents from Afghanistan's major cities and penned in their main rivals into a few mountain strongholds in the north of the country and in the Panjshir valley to the north of the capital, Kabul. The opponents of the Taliban were a mixed bag of tribal rivals, warlords and mercenaries. The majority were drawn from Tajik, Uzbek and Hazara ethnic groups. Nominally, they were loosely aligned in an umbrella group known as the Northern Alliance. During the late 1990s, they had kept fighting thanks to a precarious air bridge from Uzbekistan and Tajikistan, organized by a strange mix of the Russian government and the US Central Intelligence Agency (CIA). The most determined opponents were the fighters of Abdul Rashid Dostum in the north and Ahmad Shah Massoud in the Panjshir valley.

The Northern Alliance controlled a network of airstrips across their territory, where Antonovs and Mi-8/17s delivered arms, food and, most importantly, money to keep their troops fighting against the Taliban. In the

A B-2 Spirit stealth bomber spearheaded the first raid of Operation Enduring Freedom, dropping 40,000 pounds of satellite-guided bombs. (USAF/Senior Airman Nathan G. Bevier)





Afghanistan in 2010. (CIA)

summer months, these supply lines were relatively easy to keep open but once winter set in, the strongholds of the Northern Alliance became effectively isolated for several months at a time.

Not all opponents of the Taliban were grouped under the Northern Alliance; there was a handful of Pashtun tribes in the south who opposed the hard-line rule of the Islamic regime in Kabul.

Chapter 2

Build Up for War

The attacks by Osama bin Laden's Al Qaeda network on New York and Washington DC on 11 September 2001 killed some 2,973 American and other nationalities and the US military was soon planning to strike back at its bases in Afghanistan.

The US Defense Secretary, Donald Rumsfeld, was determined to keep a close hold on the impending Afghan war and directed US Central Command (CENTCOM) commander-in-chief, General Tommy Franks, to run most of the war from his headquarters in Tampa, Florida. A major complicating factor in the early phases of US war planning was the involvement of the Central Intelligence Agency's (CIA) covert para-military air force, including General Atomics MQ-1 Predator armed unmanned aerial vehicles (UAVs) in the war. These were controlled directly from CIA headquarters in Langley, Virginia, until President Bush placed them directly under the control of Franks.

In the immediate aftermath of the attacks on New York and Washington, Franks and his staff worked around the clock to develop strategic, operational and tactical plans to drive the Taliban regime from power and then move US ground forces into Afghanistan to hunt down bin Laden and his movement. They built a four-phase plan for the coming campaign, which was aggressive and daring. There would be no more pin-prick Tomahawk Land Attack Missile (TLAM) strikes on remote Al Qaeda camps. This time there would be US 'boots on the ground' and the campaign would be pressed on until victory was achieved. The first phase would set the conditions for the campaign and give senior commanders viable options. Next would follow an initial combat phase to secure control of Afghan air space and begin the initial insertion of US ground forces, which were initially envisaged as being predominately special forces who would join with anti-Taliban elements such as the Northern Alliance. The third phase was focused on decisive combat operations to defeat the Taliban and its



C-17 Globemaster III and C-130 Hercules aircraft at Karshi-Kanabad (K2) Air Base in Uzbekistan, which became the main base for US special forces heading into northern Afghanistan during October 2001. (USAF/Senior Airman Matthew Hannen)

Al Qaeda allies throughout Afghanistan. The final phase would build up coalition forces in Afghanistan to prevent the re-emergence of a Taliban regime and provide humanitarian assistance to the country's civilian population.

Although Afghanistan is far removed from the Middle East, US and British forces were already in the region on No Fly Zone duty over Iraq. Many of these forces and troops, participating in exercises in Egypt, Jordan and Oman, were soon assigned to support the new mission, dubbed Operation Enduring Freedom.

The USAF-run Combined Air Operations Centre (CAOC) at Prince Sultan Air Base (PSAB) in Saudi Arabia was at the heart of this initial planning as CENTCOM's largest forward-deployed operational headquarters in the Middle East region. USAF Lieutenant General Chuck Wald commanded the No Fly Zone mission from the CAOC but also in theory had responsibility for air operations across the CENTCOM area of responsibility (AOR), which stretched from the Horn of Africa into Central Asia.

To build his plan, Franks pushed for access to air bases and airspace around Afghanistan to allow the opening air campaign to get under way and for special forces teams to be flown into Afghanistan. President Bush and senior administration officials put intense pressure on regional allies to support the impending operation. His 'you are either for us or against

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us' rhetoric swung initially reluctant governments behind the US cause. Crucially, the Russians used their influence on its allies along Afghanistan's northern border – Uzbekistan, Turkmenistan and Tajikistan – to open air bases and air corridors to US aircraft. US special forces established their main base for the coming campaign at the remote Karshi-Kanabad (K2) air base in southern Uzbekistan, alongside a site for CIA Predator UAVs.

A bigger problem was on the vital southern border, where access to Pakistani airspace and bases was potentially a real show stopper. The Pakistani military regime and its spy agency, the Inter-Services Intelligence (ISI) organization, were long-standing allies of the Taliban and even had military advisors in Kabul. Pakistani President General Pervez Musharraf immediately realized the seriousness of the US threat to turn his country into a target if he did not drop his links with the Taliban. He agreed to open two air corridors across Pakistan from the Indian Ocean and to allow access to Pakistani air bases. However, for public relations reasons, this was only publicly referred to as being for search and rescue forces. The reality was more extensive and involved the US setting up a major air hub at Jacobabad Air Base in the northern Punjab for helicopters, transport aircraft and Predators. It was also the primary diversion site for US aircraft in the region. Forward-operating bases were opened at Dalbandin, Pasni, Shamsi and



RAF Canberra PR9 strategic reconnaissance aircraft and Nimrod MR2 maritime patrol aircraft, re-roled as communications relay platforms, were a key element of the UK contribution to Operation Enduring Freedom from October to December 2001. (Exercise Saif Sareea II media pool)



A B-1B Lancer heavy accelerates after take-off from Diego Garcia bound for Afghanistan during Operation Enduring Freedom. (USAF/SrA Rebeca M. Luquin)

Quetta for combat search and rescue helicopters and to support special forces teams. The CIA also set up a presence at Peshawar in the North West Frontier region to support its covert operations teams inside Afghanistan.

The British Indian Ocean Territory (BIOT) of Diego Garcia was the next important piece in the US military build-up for Operation Enduring Freedom. It became the home of Rockwell B-1B and Boeing B-52H Stratofortress heavy bombers and supporting Boeing KC-135 Stratotankers and McDonnell Douglas KC-10 Extender aerial refuelling aircraft.

Afghanistan's land-locked location and the relative lack of bases in neighbouring countries meant the fastest way to get tactical airpower into play was from US Navy aircraft carriers, positioned in the Northern Arabian Sea off Pakistan. The nuclear-powered carriers USS *Enterprise*, USS *Carl Vinson* and USS *Theodore Roosevelt* were ordered to make best speed for the war zone, with more than 100 tactical combat aircraft. Ships and submarines



A U-2 Dragon Lady of the 99th Expeditionary Reconnaissance Squadron lands at Al Dhafra Air Base in the UAE after a ten-hour mission over Afghanistan. (USAF/Staff Sgt Reynaldo Ramon)

of three carrier's battlegroups were equipped with hundreds of TALMs that could also be thrown into the fight.

As US officers gained access to bases in Pakistan during late September, it became clear that Jacobabad was not big enough, nor did it have the fuel and other supply infrastructure to host the dozens of helicopters needed to allow US special forces to rapidly open a southern front across the Pakistani border. To help overcome this problem, the carrier *USS Kitty Hawk* was rapidly converted into a 'lily pad' helicopter carrier and dispatched from its home base in Japan. Its helicopters were to stage through the forward operating bases in Pakistan, en route to objectives in Afghanistan.

Middle East air bases would play a key role in the US-led assault on Afghanistan. Many governments in the region were not keen to be publicly identified with the US campaign in Afghanistan because of the fear of a backlash from their populations, which contained large anti-American elements. Saudi Arabia refused to allow any of its bases to be used in the campaign and the UAE, Qatar and Oman ordered media blackouts on their assistance to the US and British. The Saudi decision to refuse to allow the CAOC staff to be augmented with hundreds of extra staff to help run the Afghan war was a major blow to campaign planners and the government in Riyadh also refused to allow key reconnaissance assets, such as Boeing RC-135 Rivet Joints and Lockheed U-2S Dragon Lady aircraft, to join the Afghan campaign from PSAB. They had to be based initially at Seeb in Oman for the first phase of the Afghan war, before a more permanent base

could be found at Al Dhafra in the UAE. The Saudis stuck to their hard-line position for the remainder of the year, including on one occasion refusing permission for a U-2 to divert to PSAB after Al Dhafra was closed because of bad weather. The U-2 crew were low on fuel and could not reach an alternative airfield so landed anyway, creating a major diplomatic incident with the Saudis.

The Qataris allowed the US to move into Al Udeid Air Base to establish a base for tanker aircraft that were essential to allow bombers and strike

US Central Command Area of Responsibility. (US DoD)





USAF F-15E Strike Eagles are prepared for bombing missions into Afghanistan from their forward-deployed air base at Al Jaber in Kuwait. (USAF/Master Sgt Dave Nolan)



An USAF Special Operations MH-53J Pave Low helicopter is taken off a C-17 at Masirah Island Air Base, Oman, as part of the build-up for Operation Enduring Freedom. (USAF/Staff Sgt Cecilio Ricardo)

aircraft to hit targets in Afghanistan from aircraft carriers or the giant air base on the British Indian Ocean Territory of Diego Garcia.

Oman's role proved critical to the Afghan campaign. It opened the air base on Masirah Island to US forces, allowing them to activate pre-positioned tents, a command post and aircraft ground-handling equipment. Masirah became the forward headquarters of Task Force Sword, which controlled the US special forces destined to operate in southern Afghanistan. Lockheed AC-130 Spectre gunships, MC-130 Combat Talon deep penetration transports and HC-130 Combat Shadow tankers, as well as MH-53 Pave Low helicopters, soon arrived to prepare for the Afghan mission. USAF Boeing E-3D Sentry AWACS aircraft were soon on their way to Thumrait to provide crucial airspace monitoring and battle management support.

Reinforcements to the USAF presence in the Middle East included the first ever combat deployment of the Northrop Grumman RQ-4 Global Hawk UAV. Flying from Al Dhafra, along with the U-2s, the Global Hawks flew

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long endurance missions over Afghanistan even though they were still in the experimental development stage. One was lost in a crash in the UAE desert while returning to base later in 2001.

The diversion of the US Navy aircraft carrier committed to Iraqi No Fly Zone support to the Arabian Sea to support the Afghan mission did lead the Pentagon to beef up its presence in Kuwait in order to deter any Iraqi attempt to exploit the crisis. Additional USAF F-15E Strike Eagles of the 366th Wing were deployed to Al Jaber Air Base in Kuwait and a battalion of US Army AH-64A Apache attack helicopters was also sent to the Gulf state. US Air National Guard Lockheed F-16C Fighting Falcons, equipped with the latest Litening targeting pods, were later sent to Kuwait to augment the F-15Es.

US Navy commanders were also ordered to beef up their air patrols over Middle Eastern waters during the Afghan campaign to intercept any Al Qaeda operatives who might try to escape by sea and to prevent any attacks on civilian shipping. Additional US Navy P-3C Orion maritime patrol aircraft were sent to Bahrain, Masirah and Diego Garcia to patrol the region's seas. Masirah-based P-3Cs later flew overland surveillance missions into Afghanistan.

For several years, UK forces had been planning a major exercise, dubbed Saif Sareea II in Oman during September and October 2001, so when the Afghan crisis erupted the RAF was well positioned to participate in emerging operations. Senior RAF officers, led by Air Marshal Jock Stirrup, were sent to CENTOM in Tampa to integrate UK operations with their US counterparts.

US Marines from the 15th Marine Expeditionary Unit arrive via helicopters at Jacobabad Air Base to provide perimeter security for the main US base in Pakistan during 2001. (USAF/TSgt Scott Reed)





US Marine ground crew attach fuel extension hoses during a rapid ground refuelling of two Navy HH-60 Rescue Hawk helicopters from a VGMR-352 KC-130R at Jacobabad in Pakistan. (USAF/Tech. Sgt Scott Reed)

In Oman, the bulk of the RAF force, including Tornado GR1, Tornado F3 and Harrier GR7 fast jets, C-130 Hercules and E-3D Sentry aircraft, was concentrated at Thumrait Air Base in the south of the country. Other support aircraft staged through Seeb, on Oman's northern coast.

RAF VC-10 and Tristars based at Muharraq on Bahrain for No Fly Zone duty were quickly switched to Afghan operations and were soon in high demand because they could refuel US Navy probe-equipped fighters to allow them to operate over Afghanistan from carriers in the Arabian Sea. The RAF enhanced its Sentry detachment in Oman to allow a continuous orbit to be maintained over Afghanistan to control complex air operations by US and British aircraft. Operation Veritas, as the UK mission was code-named, also led to the RAF Canberra PR9 unit, 39 Squadron, deploying to Seeb to fly photographic missions over Afghanistan. Seeb also played host to RAF Nimrod MR2 patrol aircraft and Nimrod R1 signals intelligence aircraft for the Afghan mission. The RAF Special Force Hercules unit, 47 Squadron, was already in Oman for Saif Sareea II and soon found itself working side by side with its US counterparts on Masirah.



The USS *Enterprise* was one of the first US Navy aircraft carriers to arrive in the North Arabian Sea in September 2001 and brought carrier-borne airborne fire power to within range of Afghanistan. (US Navy Photographer's Mate Airman (PJ) Philip A. McDaniel)

The Royal Navy nuclear submarines, HMS *Trafalgar* and *Triumph*, were also on station in the Northern Arabian Sea with TALMs by early October.

Canada, Australia, Spain, Germany and France sent patrol aircraft to the region to support the enhanced maritime surveillance mission during late 2001, using bases in Djibouti, UAE and Qatar. Australia sent four F/A-18 Hornet fighters to Diego Garcia to provide close-in protection for the USAF heavy bombers and tankers gathering at the base.

Chapter 3

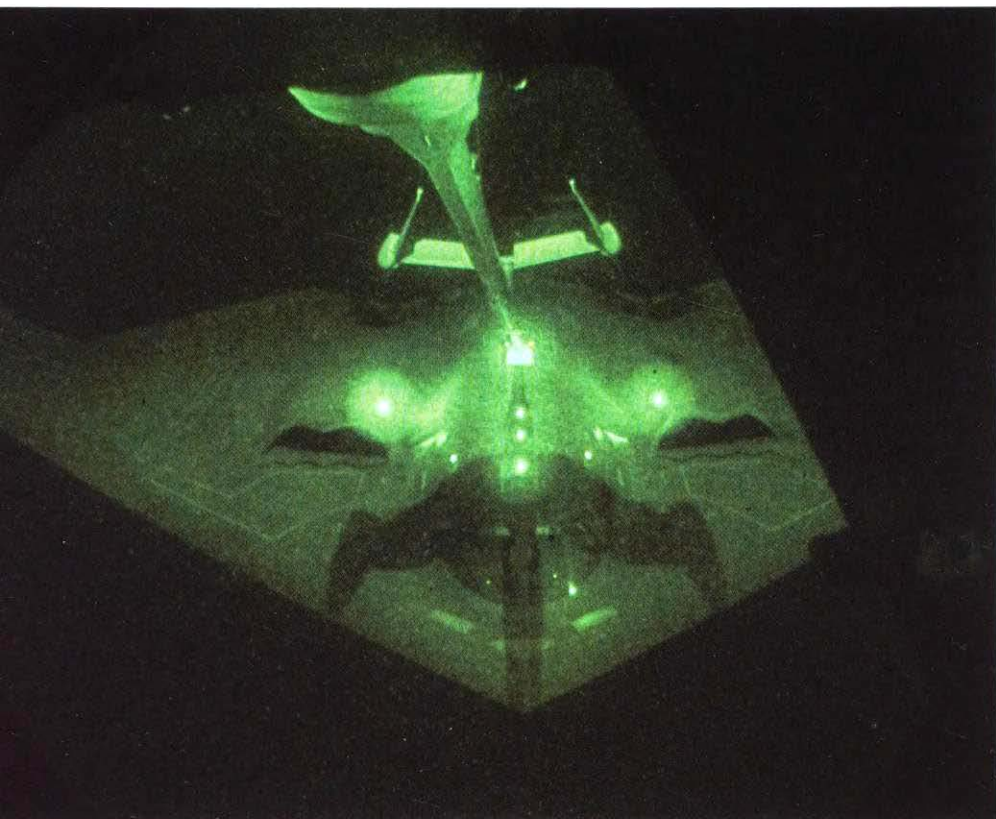
Operation Enduring Freedom, Strategic Air Campaign

US air operations over Afghanistan began even before the full attack force was in place and the plan for Operation *Enduring Freedom* was complete.

Central Intelligence Agency (CIA) General Atomics MQ-1 Predators began flying missions from Uzbekistan over Afghanistan only a few days after the attacks on New York and Washington. From the south, US Navy Grumman F-14 Tomcats from the USS *Enterprise* flew reconnaissance missions over southern Afghanistan in the last two weeks of September 2001, taking high-level images of airfields, surface-to-air missile (SAM) and anti-aircraft artillery (AAA) sites, army barracks and Al Qaeda camps. USAF Boeing RC-135 Rivet Joints and Lockheed U-2 Dragon Lady spy planes, along with US Navy EP-3E Aries IIs, started flying along the Afghan-Pakistan border to 'hoover' up electronic signals intelligence on the enemy.

USAF Boeing E-3D Sentry AWACS aircraft set up around-the-clock orbits over Pakistan, protected by F-14 combat air patrols from the USS *Enterprise* and USS *Carl Vinson*, to co-ordinate this reconnaissance effort and monitor any air activity by the Afghan air force. A couple of Afghan MiG-21s took to the skies but they gave no indication that they had any idea of the US air presence over their country and the US combat controllers on the AWACS held back, ordering the F-14s not to intercept them.

As this reconnaissance effort was under way, planners at US Central Command in Tampa and the Combined Air Operations Centre (CAOC) at Prince Sultan Air Base (PSAB) in Saudi Arabia were putting the finishing touches to the plan for Operation Enduring Freedom. The opening phase of the attack would be a predominately air operation, centred on destroying Afghanistan's air force and air defences. For the airmen preparing their plans, this was a relatively straightforward exercise. While the distances were a challenge and a complex air-to-air refuelling plan was needed to



A B-2 Spirit stealth bomber refuels from a KC-10A Extender tanker at night during its marathon flight from Whiteman AFB in Missouri to Afghanistan to start Operation Enduring Freedom. (USAF/Staff Sgt Ken Bergmann)

ensure all the aircraft could get to their targets at the required times, few of the targets were camouflaged or hardened and all of Afghanistan's aircraft and SAMs dated from the 1980s. Afghanistan's conventional armed forces were a sitting duck.

A more difficult target set was the Al Qaeda network and the senior leadership of the Taliban regime. Although some Al Qaeda training camps had been identified, the organization's leadership and most of its fighters lived in civilian houses and compounds spread around a country 251,772 squares miles in size, with a population in excess of 25 million.

To find these targets, the head of CENTCOM, General Tommy Franks, turned to the RQ-1s of the USAF's 57th Wing and the CIA. These were

sent to fly continuous orbits over known or suspected Al Qaeda and Taliban locations, looking for any suspicious activity. Plans were developed for the Predators to be on station in large numbers during the first hours of Operation *Enduring Freedom*, ready to pick up any targets that might react to the first wave of air strikes. It was hoped that senior commanders would flee their compounds and be tracked by Predators, allowing strike aircraft and AGM-114 Hellfire missile-armed MQ-1s to be vectored to attack them. This new technique was known as time-sensitive-targeting (TST). As many of the potential targets were in heavily populated urban areas, the US Defense Secretary, Donald Rumsfeld, demanded that rules of engagement be written tightly to ensure that senior officers in CENTCOM, or in some cases his own office, or in other cases even President Bush, be involved in any decision to attack them. Predator video was distributed in real-time by satellite to CENTCOM headquarters in Tampa and the Pentagon, resulting in it being nicknamed 'Predator porn' or 'Rummy Television'. Rumsfeld reportedly had a monitor on his office desk to monitor the live video feed from Afghanistan.

Through late September, US President George Bush was pushing General Franks to launch his attack on Afghanistan. He had to hold off until search and rescue helicopter units, at first Sikorsky MH-60 Black Hawks and Boeing MH-47E Chinooks of the US Army's 160th Special Operations Aviation Regiment (SOAR), were in place in Uzbekistan and Pakistan. Operation Enduring Freedom was scheduled to kick off during the evening of 7 October

Royal Navy Tomahawk cruise missiles from nuclear attack submarines in the Indian Ocean contributed to the opening night's attack of the US-led Afghan campaign. (Raytheon)



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with several packages of strike aircraft and Raytheon Tomahawk Land Attack Missiles (TLAM) hitting some thirty-one separate targets, involving 275 individual weapon aim points around Afghanistan, including airfields, radar sites, SAM batteries, Al Qaeda and Taliban command buildings and Al Qaeda camps. The strikes were spread across Afghanistan, from Tora Bora on the eastern border with Pakistan to Herat out in the west.

A barrage of fifty TLAMs from the USS *McFaul*, USS *John Paul Jones*, USS *O'Brien*, USS *Philippine Sea* and two US and British nuclear submarines opened the attack against radar and SA-3 SAM sites around Kabul, as well as several barrack buildings. Manned aircraft, including two Northrop Grumman B-2 Spirit stealth bombers, five B-1Bs and ten B-52s, as well as twenty-five US Navy tactical jets, then followed. The B-2s flew all the way from Whiteman Air Force Base in Missouri to drop thirty-two Joint Direct Attack Munitions (JDAMs) but no details of their targets have been revealed by the US military, although the USAF says they were the first manned aircraft to enter Afghan air space.

A few minutes behind the TLAMs strike on Kabul was a package of Tomcats and McDonnell Douglas F/A-18C Hornets from the USS *Carl Vinson*. The Hornets used a single AGM-84-ER Stand-off Land Attack Missile to mount a precision strike on the remains of the Afghan air defence network around their capital. This was followed by a laser-guided bomb attack by Tomcats, which also bombed a barrack complex. The US Navy jets then turned south to provide top cover for a pair of US B-1Bs that were

A B-52H Stratofortress from the 28th Air Expeditionary Wing lands at Diego Garcia after flying a mission in support of Operation Enduring Freedom. In the first sixty-eight days of the operation, the USAF flew more than 6,800 sorties or about 46 per cent of all Afghan missions. (USAF/Staff Sgt Shane Cuomo)





Afghan air force aircraft at Kandahar Airfield were some of the first targets of the US strategic bombing campaign. (US Navy/Photographer's Mate 1st Class Ted Banks)

hitting Al Qaeda targets around Jalalabad with dozens of 2,000-lb JDAMs. Nearby ten B-52s were launching a wave of attacks on targets around the Tora Bora mountain range, which was believed to be home to several Al Qaeda bases. The USS *Enterprise* launched a follow-up strike on the Kabul air defences later in the night.

Further south, Hornets from both the USS *Enterprise* and *Carl Vinson* pounded the airfield south of Kandahar city, hitting aircraft, SAMs and radars. Nearby, a pair of Tomcats from the USS *Enterprise* were tasked to hit a suspected Al Qaeda cave complex with laser-guided GBU-24 Paveway III penetrator bombs.

The long range of the Tomcats meant they were selected to join a strike by B-1Bs on Herat Air Base, near the Iranian border. Several MiG-21s were destroyed on the ground in the raid. Once the heavy bombers turned for home, the F-14s dropped laser-guided bombs on a Taliban communications site at Farah.

All the targets were being monitored in real time by Predators and the video fed back to CENTCOM, the CAOC, CIA headquarters in Langley, Virginia and the Pentagon. During the first wave of strikes, a group of suspected Taliban leaders were monitored leaving a compound in Kandahar and driving off in a convoy of vehicles. The Predator beamed the video

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imagery back to the headquarters of General Franks and senior staff officers frantically tried to get rules of engagement (ROE) clearance to attack and move a pair of US Navy Hornets into position to join the engagement. This took a long time, particularly after it seemed the targets entered a building believed to be a mosque. The attack was eventually authorized by President Bush but by the time the Hornets dropped their laser-guided bombs, several of the targets had left the building. It was an early lesson in the complexity of TST for General Franks and his team, as well as USAF commanders and staff in the CAOC.

The whole opening attack was choreographed by controllers on the AWACS and extensive tanker support, orbiting over Pakistan and the Northern Arabian Sea, ensured that all the aircraft could reach their targets on time and return safely to base. USAF Boeing KC-135Rs Stratotankers and McDonnell Douglas KC-10A Extenders were heavily involved in these operations, along with two RAF Lockheed Tristars of 216 Squadron and four Vickers VC-10s of 10 and 101 Squadrons. The British Tristar had the distinction of being the first coalition tanker asset to enter Afghanistan airspace, and in a period of just four months had dispensed more than 10,000 tons of fuel to coalition aircraft. One fifth of US aircraft flying ground attack missions were refuelled by the RAF during this phase of the war.

Aircraft from the nuclear-powered aircraft carrier USS *Theodore Roosevelt* (CVN 71) participated in the first phase of the campaign from the Northern Arabian Sea. (US Navy PH2 (AW) Jason Scarborough)





An F/A-18C Hornet is launched from the nuclear-powered aircraft carrier USS *Carl Vinson* (CVN 70) in a strike against Al Qaeda terrorist training camps and military installations of the Taliban regime in Afghanistan on 7 October 2001. (DoD/Petty Officer 1st Class Greg Messier, US Navy)

The resistance to the strikes had been limited to heavy AAA fire but US pilots reported that it was largely undirected and none of it came near any American aircraft. The Afghan air force and SAM batteries seemed to have been caught largely by surprise and made no serious attempt to fight back. While the US pilots equipped with targeting pods reported very accurate hits, intelligence experts in the CAOC and CIA were less certain about the level of damage the strikes had caused. They said more attacks were needed to make sure that the required level of damage was achieved.

The next night another wave of US aircraft was launched to attack thirteen new targets, which were similar to those attacked in the previous day. Indeed, some were re-strikes of the same targets. The first two days of bomb damage assessment (BDA) suggested that eleven out twelve Afghan SA-3 radars had been destroyed and seven out of eight airfields put of action. Half of the long-range radars had been destroyed, as well as three radio towers and scores of barracks, training camps and cave complexes. This had degraded the Afghan air defences enough for the US to begin daylight air operations on 9 October. By the end of the first week of air operations, US strike power in theatre was increased by the arrival of the USS *Theodore Roosevelt* and its air wing. USAF Lockheed AC-130U Spectre gunships also joined the fight on 15 October.



Hellfire missile-armed MQ-1 Predator unmanned aerial vehicles played an integral part of the US air campaign, hunting time-sensitive and high-value targets. (USAF)

A USAF B-1B bomber and a KC-10 Extender tanker prepare to take off for a combat mission over Afghanistan. The B-1 bombers dropped over 3.8 million pounds of weapons and over 60 per cent of all Joint Direct Attack Munitions during the first month of the campaign. (USAF/Staff Sgt Shane Cuomo)

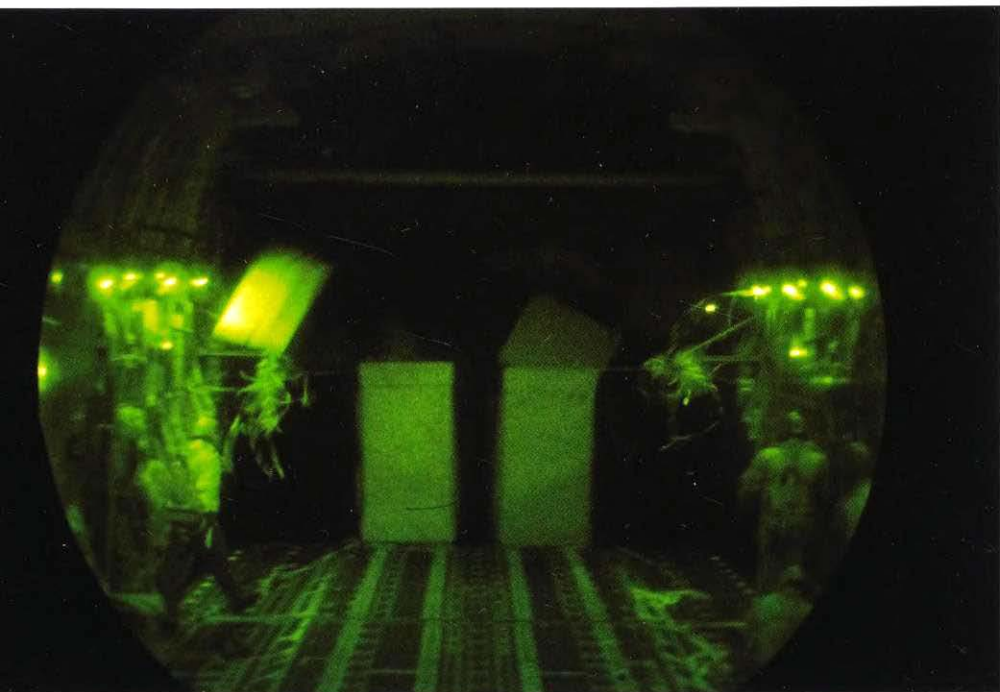




Two F/A-18 Hornets from the 'Fighting Redcocks' of Strike Fighter Squadron 22 (VFA-22) receive fuel from an RAF VC-10 tanker over the Northern Arabian Sea at the height of Operation Enduring Freedom. (US Navy/Lt Steve Lightstone)

President Bush was very keen to stress that the US military campaign was aimed at the Taliban military and Al Qaeda, rather than the Afghan people, so he ordered nightly humanitarian aid drops to be made by USAF Boeing C-17 Globemaster strategic transport aircraft. These were made from Ramstein Air Base in Germany and involved multiple in-flight refuellings to reach their drop zones in Afghanistan. The first drops were supposed to coincide with the opening of the air campaign but their F-14 escort could not link up with the two C-17s so they had to turn back without dropping their cargoes. The first successful drop occurred on 8 October in northern Afghanistan and nightly drops continued throughout October and into November.

This set the scene for the second week's air operations, with an increasing target set of Afghan ground forces and Al Qaeda targets being attacked around Kandahar and Kabul by a mix of USAF heavy bombers and US Navy tactical jets. The B-2s were used only occasionally, flying a total of six missions from Whiteman, via Diego Garcia, dropping some sixty-four munitions, including GBU-37 satellite-guided penetrator weapons on what the Pentagon called an 'underground leadership target'. In the first five days of the air campaign the B-1Bs and B-52s dropped 500 JDAMs, 1,000 Mk 82 unguided bombs and fifty CBU-87 cluster bombs. In the same period the US Navy Hornets and Tomcats dropped 240 JDAMs, 1,000-lb and 2000-lb



Tri-walled Aerial Delivery (TRIAD) boxes break apart as they are dropped at high-altitude from a USAF C-17 Globemaster III over Afghanistan, releasing thousands of Humanitarian Daily Rations (HDRs) to fall to the ground near civilian population centres. (USAF/TSgt Cary M. Humphries)

laser-guided bombs. The relatively modest amount of weaponry dropped illustrated the lack of large fixed targets in Afghanistan and the difficulty finding the elusive and fleeting high-value targets linked to the leadership of Al Qaeda and the Taliban. There was some tension between the aircrews, intelligence analysts and senior commanders over the CENTCOM's BDA criteria. The pilots, who could look at the targets on the ground with the targeting pods, reported that Afghan's air force and air defence were inoperable but intelligence analysts wanted still photographs of every blown up plane and missile battery before they would declare a kill. After a couple of days the aircrews said they were just pounding rubble but senior commanders in the Pentagon waited for eleven days before they formally switched the main effort of the air campaign from fixed targets to the Taliban's army in the field opposing the Northern Alliance.

Chapter 4

Operation Enduring Freedom, Special Forces Insertion

As US and British aircraft, backed by Tomahawk Land Attack Missile (TLAM) firing ships and submarines, were conducting strategic air attacks to gain air supremacy by destroying Afghanistan's air force and ground-based air defences, General Tommy Franks and his special operations commanders were under intense pressure to get 'boots on the ground' in the central Asian country to start a land offensive against the Taliban army.

High mountains and a period of bad weather were playing havoc with US CENTCOM's plans to move US Army special forces teams and CIA paramilitary operatives to locations deep inside Afghanistan to link up with forces of the Northern Alliance and Pashtun rebel groups.

During late September 2001, Joint Special Operations Task-North (JSOTF-North) (which was renamed Task Force Dagger in mid-October) was established at Karshi Kanabad (K2) airfield in Uzbekistan to control this operation. Daily sorties by Boeing C-17 Globemasters and Lockheed C-5 Galaxy airlifters delivered troops, supplies and helicopters to the remote air base.

The first US helicopters to deploy were Sikorsky MH-47E Chinooks from D Company, 2nd Battalion, of the 160th Special Operations Aviation Regiment (SOAR), as well as a pair of Sikorsky MH-60L Direct Action Penetrator (DAP) helicopters. The initial task of these helicopters, supported by two USAF HC-130P Combat Shadow tankers of the 9th Special Operations Squadron (SOS), was to provide combat search and rescue (CSAR) coverage over northern Afghanistan. The US Army Special Operations Chinooks and DAPs were the only helicopters in the US inventory that had the power to operate over the 10,000-foot-plus high mountains in northern Afghanistan. They had to be stripped down to reduce weight to improve performance and even then could only carry less than half their normal complement of forty fully loaded troops.



An MC 130 Hercules aircraft heading towards Afghanistan during a night-time supply drop to US special forces troops is refuelled from a USAF KC 135R Stratotanker flown out of Burgas, Bulgaria. (USAF/Master Sgt Blake R. Borsic)

Planners in the Joint Special Operations Air Component (JSOAC) at K2 were preoccupied with developing plans to start moving troops into Afghanistan. This small co-ordination cell, within the headquarters of Task Force Dagger, was responsible for organizing the movement by air of US special operations forces and directing requests from front-line US troops for offensive air support to the USAF's CAOC at Prince Sultan Air Base (PSAB) in Saudi Arabia.

Link-ups with Northern Alliance forces were initially planned to take place near Mazar-e-Sharif, Konduz and north of Bagram. In the south, early planning concentrated on direct action raids by US special operations forces in Taliban and Al Qaeda bases. These forces would be launched from Masirah island, off Oman, the newly established US air base at Jacobabad in Pakistan and from the USS *Kitty Hawk* in the Arabian Sea. CIA Special Activities Division operatives were the first Americans to move into Afghanistan, flying to link up with Northern Alliance leaders on several

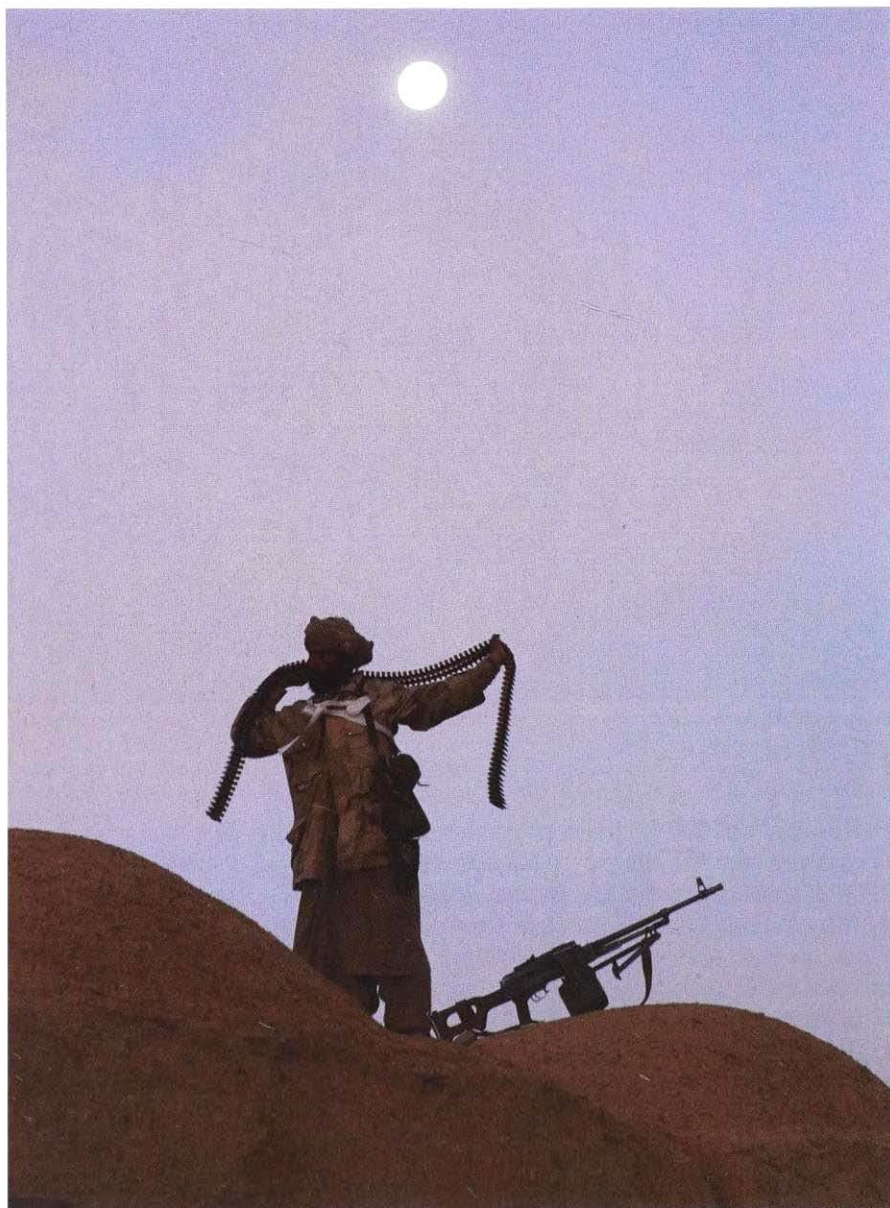


MH-47 Chinook helicopters of the US Army's 160th Special Operations Aviation Regiment spearheaded the effort to insert special forces teams into Afghanistan. (USAF/Airman Matthew R. Loken)

ex-Russian Mil Mi-17 helicopters. Once in place the CIA teams secured permission for US Army special forces Operational Detachment Alpha (ODA) teams from the 5th Special Forces Group to link up with Northern Alliance forces. These eight to twelve-man-strong teams were self-contained units trained and equipped to work with local forces. Crucially, they brought with them laser range finders and satellite radios to allow them to act as forward air controllers (FACs) for US strike aircraft and bombers.

The Chinooks and DAPs arrived at K2 just in time to stand up a CSAR alert force for the start of the US strategic air campaign on 7 October. For the next week, logistic delays and bad weather played havoc with attempts by JSOTF-North commanders to move their ODAs into Afghanistan. They were under intense pressure from President George Bush, Secretary of Defense, Donald Rumsfeld, and CENTCOM chief, General Tommy Franks, to get things moving and take the war to the enemy.

ODAs and helicopter crew began planning their first mission from K2 on 14 October and they were ready to go when bad weather closed down



Training and leading pro-US Afghan fighters in Afghanistan was the main aim of the first US special forces troops entering the country in October 2001. (US Navy/Chief Photographer's Mate Johnny Bivera)

air operations over Northern Afghanistan. The orders to go were given on 16 October but, again, the weather meant it was not until the evening of 19 October that a MH-47E, escorted by two DAPs, took off from K2 to deliver ODA 595 into the Dari-a-Souf valley north of Mazar-e-Sharif to link up with the forces of warlord General Abdul Rashid Dostum. The helicopters had to be refuelled in mid-air to reach their objective and were engulfed in a sandstorm as soon as they entered Afghan air space that almost forced them to turn back. The crews pressed on and the Chinook landed to unload its passengers, while the heavily armed and armoured DAPs circled the landing zone. The next day, the special forces FACs were on the front line directing Boeing B-52 Stratofortresses to strike at Taliban front lines around Mazar-e-Sharif.

Later, on 20 October, a USAF Sikorsky MH-53J, flying from Jacobabad in Pakistan, delivered ODA 555, also known as the Triple Nickel, to the Panjshir Valley, north of Kabul. Bad weather in northern Afghanistan hampered their

An RQ-1B Predator unmanned aerial vehicle from the 11th Expeditionary Reconnaissance Squadron is prepared for a night-time Operation Enduring Freedom mission from Jacobabad Air Base in Pakistan. (USAF/Tech. Sgt Joe Springfield)





The drogue of a USAF KC-10 Extender pumps fuel into a US Navy F-14 Tomcat jet during a mission over Afghanistan. (USAF/Photo by Senior Airman Matt Donegan)

insertion, so the special forces soldiers were flown 'over the weather' in a MC-130 and shuttled down from K2 to Pakistan. Then the USAF special operations aviators in Pakistan flew them northward. Within hours of landing, the soldiers soon made their way down towards the battle lines on the Shomali Plain near Bagram. This was the gateway to the Afghan capital, Kabul, only some twenty-five miles to the south.

Over the next two weeks, more teams were inserted by MH-47E into the Northern Alliance territory from K2 to increase the pressure on the Taliban. ODA 585 was landed in the Callocutta region, near Konduz, on 23 October and ODA 534 was inserted to link with Dostum's rival General Atta Mohammed's forces in the Dari-e-Balkh Valley on 3 November. To increase the capacity of the helicopter force at K2, the US military began co-ordinating its airlift operations into Afghanistan with those of the CIA. Although the number of MH-47Es and HC-130Ps at K2 had been increased, the ranges involved to fly into Afghanistan and the need for air-to-air refuelling meant there was limited capacity to move troops into the country and to re-supply them or evacuate casualties. Shuttles were set up with

MH-47Es making the initial flight into Afghanistan, and then they would transfer their passengers and cargo into CIA Mi-17s for the onward journey to the centre of the country. ODA 553 took this route into Bamian province on 2 November and on 8 November ODA 586 and 594 were shuttled to Konduz and Panjshir Valley respectively. Three days later, ODA 554 was flown out to western Afghanistan to join up with the forces of Ismail Khan who were preparing to seize Herat.

In the last week of October and into November, the US FAC teams were now operating on all the active front lines facing Taliban troops defending Konduz, Mazar-e-Sharif, Herat and Bagram. The FACs began to use thermal sights, global positioning systems and laser ranger finders to pin-point Taliban positions; they then transmitted the co-ordinates via

In one of the iconic images of the Afghan war, Master Sergeant Bart Decker, an eighteen-year-old USAF combat controller from USAF Special Operations Command, rides horseback with a Northern Alliance fighter in October 2001. (USAF)





The AC-130U Spectre gunships were the USAF's primary night-time close air support platform during the first three months of Operation Enduring Freedom. They played a key role in ending the Taliban prison revolt at the Qala-e-Jangi fortress outside Mazar-e-Sharif on 25 November. (USAF)

laptop computers to the JSOAC and US attack aircraft orbiting over these battlefields. Targets were being hit within a few minutes of them being detected by US FAC teams. They concentrated on Taliban command posts detected by their portable signals intelligence-monitoring equipment, as well as tanks, artillery pieces and forward supply dumps. Concentrating on hitting Taliban field commanders and their prestige weapons systems meant the morale of Taliban units began to crumble under the weight of around-the-clock air attacks. They had never faced such 'surgical' attack before and it was only a matter of time before the Taliban units on these key sections of the battlefield began to crack.

High above the battlefield, US airmen had also changed the way they operated. CAOC planners had begun to divide the terrain over the battlefields into so-called 'kill boxes' and they then started assigning US Navy F-14 Tomcats with airborne-forward air controller (A-FAC) qualified crews



USAF HC-130 Combat Shadow tankers were instrumental in extending the range of US Army and USAF helicopters penetrating deep into Afghan air space by providing air refuelling. (USAF/Tech. Sgt Mike Buytas)

to patrol each one. The Tomcats had the longest endurance between refuelling of any US tactical jet in theatre, so their crews could remain on station for a couple of hours and really get to know the situation on the ground and establish good working relationships with the US FACs on the ground. The Tomcat crews' job was to co-ordinate the flow of aircraft to targets within specific kill boxes and in some cases 'buddy-lase' targets for these inbound jets to speed up the time between calls for air support and the dropping of bombs. The Tomcats also had one of the most capable laser designator systems at the time so their crews often had better ability to find and pin-point targets.

During night-time, the AC-130s would take over the job of patrolling the kill boxes over the battle lines, ensuring the air onslaught on the Taliban was relentless.

K2 air base was constantly being reinforced as the US ramped up its effort to defeat the Taliban. The USAF 16th and 352nd Special Operations Wings (SOWs) deployed significant forces to the base, including Lockheed MC-130 Combat Talon airlifters and Lockheed AC-130U Spectre gunships. The main task of the MC-130s was to parachute drop supplies to the ODA and humanitarian aid to civilians. They also brought with them several BLU-82 'Daisy Cutter' fuel-air explosive bombs.



A USAF HH-60G Pave Hawk helicopter from the 66th Expeditionary Rescue Squadron takes off from a forward-deployed operating base in Pakistan during a training mission supporting Operation Enduring Freedom. (USAF/Tech. Sgt Mike Buytas)

On 9 November, Northern Alliance troops struck at Mazar-e-Sherif and within a few days the Taliban troops defending the city were in full retreat. US FACs were working with the Northern Alliance advance guard, directing US aircraft to bomb Taliban tank and mobile units that tried to counter-attack.

At the same time, the Northern Alliance launched its drive on Kabul and within a day the Taliban were in full retreat. On 12 November the Taliban government and its Al Qaeda allies fled the Afghan capital. During the afternoon of the following day, Northern Alliance troops entered the city without meeting any determined resistance. Jalalabad, near the Pakistani border, fell on 14 November.

The final phase of the war in the north of Afghanistan was concluded over the next two weeks as the remnants of the Taliban forces were surrounded in Konduz, under relentless pounding from US airpower. This came to a climax on 25–26 November when mass desertions and surrender eventually led to the Taliban defences collapsing. Several hundreds of prisoners were corralled in the Qala-e-Jangi fortress outside Mazar-e-Sharif on 25 November. The prisoners revolted and overpowered their guards, killing a CIA operative in the ensuing battle. US and British special forces teams arrived on the



A USAF MH-53J Pave Low III helicopter machine gunner from the 16th Special Operations Wing mans his mini gun as he searches for threats while his aircraft refuels during a mission over southern Afghanistan. (USAF/Tech. Sgt Manuel Trejo)

scene and began directing waves of US Navy jets and USAF AC-130 gunships to pound the escaped Taliban. It took several days for their resistance to be broken. Fewer than 100 Taliban fighters survived the battle and fifty Northern Alliance soldiers were killed.

Chapter 5

Operation Enduring Freedom, Southern Front

Central to General Tommy Franks' plans to defeat the Taliban was the opening of a southern front from Pakistan, against their strongholds around Kandahar. Unlike in the north, there were few anti-Taliban militia groups in the south that could be rallied to the US cause. Also, the south was home to scores of suspected Al Qaeda training camps and compounds that needed to be targeted before the occupants could make their escape. A very different US strategy was needed for the war in the south, which would involve US and coalition forces, assigned to Task Force Sword, in direct combat operations against the Taliban and their Al Qaeda allies.

The first phase of offensive operations in southern Afghanistan got under way in the early hours of 20 October with a raid by US Army Rangers on a suspected Taliban-held compound and airstrip, dubbed Objective Rhino, in the deserts of Helmand province, to the south-west of Kandahar city. Some 200 Rangers parachuted into the desert and then assaulted the compound, with fire support from a Northrop Grumman B-2 Spirit stealth bomber and Lockheed AC-130 Spectre gunships, before securing the airstrip to allow two Lockheed MC-130s Combat Talons to return and recover them back to Masirah Island in Oman. This operation went well, with eleven enemy fighters being killed and a haul of intelligence documents being captured.

At the same time as the assault on Objective Rhino, a contingent of the elite Delta Force was being flown towards Kandahar in Boeing MH-47E helicopters to assault a compound where the Taliban leader Mullah Omar was suspected to be hiding. Task Force Gecko's helicopters landed successfully but the assault force met some resistance as they cleared their objectives. When the helicopters were extracting the Delta Force operators, one of the pilots, flying on night vision goggles, misjudged his take-off and struck the roof of a nearby building, ripping off part of his rear undercarriage.



US Marines in a Light Armored Vehicle (LAV) prepare to go on patrol from FOB Rhino as an AH-1W Super Cobra helicopter flies overhead. (US Navy/Chief Photographer's Mate Johnny Bivera)



US Marine CH-53E Super Stallions, refuelled in the air by a KC-130R Hercules, were the workhorses of the operation to insert the first US combat forces into southern Afghanistan. (USMC/CWO2 William D. Crow)

The helicopter kept flying and made it safely to Jacobabad in Pakistan for repair.

Elsewhere in Pakistan, other US aviators were not so lucky. A Ranger reaction force had been positioned at a forward airstrip at Dalbandin, a stone's throw from the Afghan border, but one of its MH-60K helicopters was caught in a 'brown-out' and rolled over, killing two Rangers and injuring several others.

Operations in the south were hampered by the lack of an anti-Taliban organization such as the Northern Alliance. The first attempt to mobilize support among Pashtun tribes ended in disaster on 26 October when the anti-Taliban leader Abdul Haq was cornered by his enemies in southern Afghanistan. After a bloody battle, Haq was captured and hanged by the Taliban, despite the CIA sending a General Atomic MQ-1 Predator unmanned aerial vehicle (UAV) to try to provide close air support to his beleaguered fighters.

The US now turned its attention to a relatively unknown Afghan called Hamid Karzai who claimed he could rally the Pashtun tribes against the Taliban. He had entered Afghanistan on a motorcycle with a satellite telephone on 8 October and managed to raise a group of 150 fighters to take on the Taliban. They were more successful and managed to fight off Taliban pursuers for four weeks. His luck ran out and he was rescued by US Navy SEALs and flown out to safety in Pakistan by US helicopters.

In the meantime, the commander of Task Force Sword, US Army Major General Dell Dailey, was planning more direct action to keep the pressure on the Taliban in southern Afghanistan. On 13 November, a MC-130 parachuted a thirty-two-man Ranger assault force to secure a desert airstrip southwest of Kandahar, dubbed Objective Bastogne. An hour later, two MC-130s arrived and began unloading four Hughes MH-6J Little Bird helicopter gunships, of the 1st Battalion, the 160th Special Operations Aviation, and equipment to set up a forward arming and refuelling point (FARP). Within minutes the helicopters had been assembled and were airborne to attack a series of Taliban and Al Qaeda targets around Kandahar, including a large military vehicle park. The helicopters made several strafing runs with canons and rockets before returning to the FARP. They then re-armed and refuelled before striking a fuel dump and compound. The whole force, including the disassembled MH-6Js, had completed its mission and was airborne out of Afghan airspace on MC-130s within five and half hours of the first Rangers landing by parachute.

Three days later, the US special forces mounted Operation Relentless Strike to deliver six desert high-mobility vehicles and fifty Rangers to

US Marines of the 26th Marine Expeditionary Unit (MEU) rest for a moment and take a rare opportunity to get cleaned up, do some laundry and repair uniforms at Kandahar Airfield in December 2001 as a USAF C-17 Globemaster III lands. (US Navy/Photographer's Mate 1st Class Ted Banks)



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Objective Anzio in southern Afghanistan by MC-130. They then moved out into the desert to secure a landing strip and FARP for another MH-6J strike force to be delivered the following night, to allow it to launch attack missions around Kandahar and depart before daylight. This procedure was followed for another night before the whole force was extracted on 19 November.

US military planners were keen to repeat the success of these operations and spread their presence across southern and western Afghanistan to gain intelligence and keep the Taliban off balance. The British government was very keen to contribute troops to Operation *Enduring Freedom* and offered 22 Special Air Service (SAS) Regiment to join the effort in the south.

A and G Squadron of 22 SAS were flown forward from their advance base at Thumrait in Oman to Dalbandin and another base in Pakistan on 24 October, before being flown into north-west Afghanistan to carry out vehicle-borne search-and-destroy missions to the east of Herat for two weeks. The force was extracted back to the UK by 8 November.

In early November Karzai had managed to escape from Afghanistan with his fighters and met senior US officers at Jacobabad Air Base in Pakistan to plan the next stage of the campaign. The Afghan leader was back with his fighters in Uruzgan province on 14 November to greet eleven US soldiers from Operational Detachment Alpha (ODA) 574 as they landed in five MK-60K helicopters.

US Marines from the USS *Bataan's* (LHD 5) Amphibious Ready Group cross load into a CH-46E Sea Knight helicopter at Jacobabad Air Base in Pakistan before heading to FOB Rhino. (US Navy/Chief Photographer's Mate Johnny Bivera)





US Marines with the 26th Marine Expeditionary Unit (Special Operations Capable) flying in a CH-46E Sea Knight helicopter of Marine Medium Helicopter Squadron-365 during the mission to seize Objective Rhino. (US Navy/Chief Photographer's Mate Johnny Bivera)

Two days later Karzai's supporters seized control of the provincial capital, Tarin Kowt, from the Taliban and the US troops with him were thrust into the centre of the action. The Taliban assembled a large column of troops, pick-up trucks and tanks in Kandahar to strike back at rebels. ODA 574 and fifty of Karzai's fighters took up positions dominating the main road through a pass that the Taliban column would have to take. At dawn on 17 November, the Taliban troops approached the first US position. US Marine Corps F/A-18C Hornet pilots from VMFA-251 were soon overhead and spotted a column of more than forty vehicles winding up the pass. They began the first of many attack runs on the Taliban column. F-14s with Airborne-forward air controllers (A-FACs) were soon on the scene co-ordinating the flow of US Navy jets against the Taliban. For just over three hours, ODA 574 and the US Navy jets pounded the Taliban who were now in full retreat, leaving thirty destroyed vehicles and 300 dead behind. The

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battle was a major turning point in the south and for the first time a major town had risen up against the Taliban.

US commanders then dispatched ODA 583 into southern Afghanistan to link up with another anti-Pashtun chief, Gul Agha Sherzai, who was based to the south of Kandahar near Spin Boldak. USAF MH-53Js delivered ODA 583 on 19 November and they were soon locked in battle with the Taliban to seize control of Kandahar airfield. Their first operation at Tahk-the-pol on 24 November met fierce Taliban resistance, despite the US special forces troops calling in heavy air support.

With the military situation in the south moving more favourably, General Tommy Franks, the US Central Command chief, decided the time was ripe to introduce US combat forces into the region. US Marines of the 15th and 26th Marines Expeditionary Units (MEUs) had been held offshore on amphibious assault ready for this move for several weeks. They had been grouped into an ad hoc brigade-sized unit dubbed Task Force 58 for the operation.

On 25 November, TF 58 commenced operations to seize Objective Rhino, with six USMC CH-53Es (three each from the 15th and 26th MEUs) launching from the USS *Peleliu*. The first three helicopters conducted night

US Marine Corps KC-130R Hercules transport aircraft set up a shuttle service with US bases in Pakistan and Oman to move troops and supplies into FOB Rhino during December 2001. (US Navy/Chief Photographer's Mate Johnny Bivera)





Navy Seabees of Naval Mobile Construction Battalion 133 run their graders over the FOB Rhino dirt landing strip to remove excess dirt and repair holes caused by the heavy aircraft flying in and out of a strategically located base in southern Afghanistan. (US Navy/Master Chief Photographer's Mate Terry Cosgrove)

aerial refuelling with USMC Lockheed KC-130R Hercules tankers en route to the objective, 350 nautical miles away from the ships in the northern Arabian Sea. The three helicopters in the second wave had difficulty conducting aerial refuelling but pressed on. The first CH-53Es flown by crews from HMM 163 were the first aircraft in the LZ and delivered almost 200 marines safely onto the objective.

They were met by a US Navy SEAL reconnaissance team that had been inserted on 21 November. US Navy Lockheed P-3C Orion AIP aircraft provided continual Intelligence, Surveillance and Reconnaissance (ISR) coverage around the US Marines throughout the night and on all subsequent nights.

Once the runway was lit by USAF Special Tactics Squadron (STS) personnel and declared KC-130 capable, additional troops flew in on USMC KC-130s from Jacobabad, where they had been pre-positioned. The first KC-130 to land on the dirt airstrip was flown by a VMGR-352 detachment aircrew,

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landing an hour and a half after the insertion of the assault force. Close Air Support (CAS) was provided by four AH-1W and three Bell UH-1N Huey helicopters, four McDonald Douglas AV-8B Harriers from each MEU, as well as fixed wing USAF and US Navy aircraft.

An AV-8B Harrier II soars off the USS *Peleilu*'s bow for an attack mission over Afghanistan in support of Operation Enduring Freedom in November 2001. (USMC/ Sgt Joseph R. Chenelly)



The following day a USAF Northrop Grumman E-8 Joint STARS radar surveillance aircraft detected several Taliban armoured vehicles to the north-west of FOB Rhino. After an A-FAC confirmed their identification, F-14s from the USS *Theodore Roosevelt* and Marine AH-1Ws flying from the newly renamed Forward Operating Base (FOB) Rhino attacked and destroyed vehicles.

The first wave of C-17 aircraft arrived at FOB Rhino on 28 November, transporting SEABEES from Naval Mobile Construction Battalion (NMCB) 133 to begin improving the conditions of the airstrip to allow it take sustained air operations. By this point 1,000 US Marines were ashore in Afghanistan and were ready to start offensive operations. Their first mission was to conduct interdiction missions on the main roads around Kandahar.

Another SAS force returned to newly liberated Bagram in mid-November and was soon given the task of raiding a suspected Al Qaeda opium storage site in southern Helmand province. Approximately 60 to 100 enemy fighters were suspected of holding the site, so two SAS squadrons of some 120 men were needed. The USAF offered to fly the SAS and their vehicles into a

US Navy ground crew prepare a P-3C Orion for a surveillance mission over southern Afghanistan in support of the US Marines defending FOB Rhino. (US Navy/ Photographer's Mate 3rd Class Gary Granger)



desert airstrip close to the objective in six MC-130s, with four US Navy McDonnell Douglas F/A-18C Hornets and two Grumman F-14 Tomcats laid on for close air support. Operation Trent kicked off with a High Altitude, Low Opening (HALO) insertion of a reconnaissance team from an RAF 47 Squadron Hercules two days ahead of the main assault. They secured a desert air strip for MC-130s, ahead of the main attack, which was scheduled to go in broad daylight. The SAS troops advanced on the target and met heavy resistance, which required the Hornets and Tomcats to be called in to destroy several Al Qaeda bunkers. After a three-hour battle, the SAS force withdrew with a haul of laptop computers and documents, as well as four wounded British soldiers. The US sent an MH-47E from Pakistan to pick up the casualties and the SAS remained on patrol in southern Afghanistan for several more days.

During the first week of December, US troops and anti-Taliban fighters were converging on Kandahar when disaster struck ODA 574 and Karzai. As they approached the city, a computer glitch resulted in the wrong co-ordinates being transmitted to a Boeing B-52 Stratofortress, which dropped a satellite-guided Joint Direct Attack Munition (JDAM) on the US troops and their Afghan allies. Two Americans and six Afghans were killed. Karzai was slightly injured, along with dozens of other Afghans and US troops.

Two USAF MH-53Js from Jacobabad in Pakistan made a high-risk daily light flight over Taliban-held territory to bring out the wounded US and Afghan personnel. They then had to refuel in-flight at only 200 feet to top up their fuel tanks to give them range to reach the USMC-run airstrip at FOB Rhino.

Thirty-nine casualties were brought to FOB Rhino for triage and nineteen US personnel were transferred to an USAF medevac C-130 and flown out to hospital in Oman. Twenty Afghan casualties were taken by CH-53E helicopter to US ships in the northern Arabian Sea.

As this incident was unfolding ODA 583 and its ally Sherzai were approaching Kandahar airfield. By 7 December, the Afghan leader's fighters had driven the Taliban from the airfield and were at the gates of Kandahar city. By the middle of the afternoon ODA 583 was in the governor's place in the city. The Taliban had fled without putting up any resistance and crowds were on the streets cheering Sherzai's fighters.

The finale of the opening phase of Operation Enduring Freedom would take place in December in the east of Afghanistan. With the main urban cities now free of Taliban fighters and their Al Qaeda allies, attention focused on hunting down the remnants of Osama bin Laden's organization. Intelligence suggested that he had fled to the border region with Pakistan known as Tora Bora with several hundred of his most loyal fighters. Two units of US special forces, ODA 572 and 561, plus CIA paramilitary units, were ordered to the

region to mobilize Afghan militia forces to hunt down bin Laden. USAF MH-53Js and CIA Mil Mi-8/17s flew the US forces into the mountains south of Jalalabad at the end of the first week of December to begin the operation. For three weeks the US troops and their Afghan allies started to close the ring around the Al Qaeda fighters. Forward air control teams were flown to mountain-top positions to begin calling down close air support on suspected enemy positions. US Navy P-3C AIPs and Predator UAVs joined the ISR effort in an attempt to put the Al Qaeda fighters under constant surveillance. The bombing effort against Tora Bora proved to be some of the most intense of the Afghan campaign, with US Navy jets alone dropping 2,100 tons of bombs or some 25 per cent of all the bombs expended during the whole of Operation Enduring Freedom to date.

The mountainous terrain and terrible winter weather, however, proved problematic for the Americans. They could not pin down their enemies and by 20 December, they had fled to relative safety in Pakistan. Many of the Afghan fighters hired by the CIA to join the operation proved less reliable than those of the Northern Alliance. Some were suspected of taking bribes to allow the Al Qaeda chief and his supporters to pass through their positions.

Hamid Karzai became Afghanistan's interim president in December 2001 after playing a prominent role in the defeat of the Taliban around Kandahar. (USAF/Senior Airman Bethann Hunt)



This was a messy and unsatisfactory end to what had otherwise been a very successful US-led campaign in Afghanistan.

Air operations were central to the US strategy to defeat the Taliban during the last three months of 2001. Strike aircraft from the US Air Force, US Navy and US Marine Corps flew some 6,546 attack sorties, dropping 17,500 munitions on 120 fixed targets, 400 vehicles and artillery pieces as well as thousands of fleeting battlefield targets. The Pentagon claimed more than 80 per cent hit rates for its airdropped weapons, even though only some 60 per cent of the weapons dropped were precision-guided munitions. This phase of the campaign was remarkably free from incidents involving civilian casualties, with fewer than a dozen incidences being identified as occurring.

The bulk of the offensive air operations was borne by US Navy and Marine Corp jets launched from the two carriers that were kept on station in the North Arabian Sea during this period, and USAF heavy bombers based on the British Indian Ocean Territory of Diego Garcia. The US Navy and Marine Corps launched some 4,900 sorties or 75 per cent of all strike sorties flown, compared with 701 by USAF Rockwell B-1 Lancer, B-2 and B-52 bombers, 225 by AC-130 gunships and 720 by USAF fighters tactical jets flying from Kuwait. Between October and December 2001, this broke down into 3,700 by F/A-18s, 1,200 by F-14s, 470 by F-16s, 375 by B-52s, 320 by B-1s, 250 by F-15Es and six by B-2s. US Navy ships, as well as US and Royal Navy submarines, fired some eighty-eight Tomahawk Land Attack Missiles in the first week of Operation Enduring Freedom.

When statistics for the weight of bombs dropped are analyzed, the B-52s and B-1s, between them, dropped 7,000 tons of munitions between October 2001 and March 2002, or 75 per cent of all weapons dropped by US aircraft.

Airlift and tanker operations were the other crucial element of the US air campaign, with US Air Mobility Command aircraft flying 1,500 sorties up to 12 November 2001 and some 11,000 by June 2002.

For the bulk of US airmen, the opening phase of the Afghan campaign was a very straightforward affair. The Afghans put up little organized resistance and the main challenge was finding valid targets to attack.

The real stars of the campaign from the aviation side, were the crews of the USAF and US Army Special Operations Command helicopters and aircraft, backed up by CIA, RAF and US Marine Corps aviators, who flew into remote and unknown landing zones to deliver special forces into the battle. The brunt of the fighting in this phase of the war up to mid-December 2001 fell on the shoulders of fewer than 400 US and UK special forces operators, and a similar number of specialist aviators. Their exploits and bravery turned the tide of the battle on the ground.

Chapter 6

Operation Anaconda and into 2002

At the start of 2002, US and international military forces were on the ground in strength in Afghanistan to complete the military campaign against the Taliban and Al Qaeda, as well as to help set up a new Afghan government in Kabul.

The USAF, US Marine Corps and NATO airlift units were ramping up their operation to flow in troops, vehicles and other equipment because overland routes into landlocked Afghanistan were still not open. Airfield construction, engineering and bomb disposal units were in the first wave of this operation to bring Afghanistan's devastated airfield back into use. The USAF concentrated on turning Bagram and Kandahar air bases into major hubs for new combat ground combat units that were starting to flow into the country. Meanwhile, the RAF was given the job of getting Kabul International Airport back into use as the main hub for the International Security Assistance Force (ISAF), which was taking over responsibility for security in the Afghan capital.

US and UK air traffic controllers supervised the landing and take-off of military aircraft and on regular occasions civilian aircraft carrying returning refugees, aid workers and international diplomats. A major problem was the lack of bulk fuel supplies in-country, so aircraft needed to land with enough fuel in their tanks to allow them to complete their outbound journeys. With the security situation still fragile in much of the country, the US and ISAF military authorities limited the type of aircraft that could land in daylight. A strict system of 'landing slots' was co-ordinated from the USAF-run Regional Air Movement Co-ordination Center (RAMCC) at Al Udeid Air Base in Qatar.

The lack of infra-structure and fuel in the country meant the USAF and its allies were not yet able to move fighter aircraft into Afghanistan to provide close air support for any ground troops in danger. Jets from US Navy aircraft carriers in the Arabian Sea as well as fighters and bombers at bases around



A US Army AH-64 Apache lands near the town of Khowst, Afghanistan, to refuel and prepare to provide air support to soldiers conducting a cordon search during Operation Mountain Sweep in August 2002. (US Army/Spc. Patrick Tharpe)

the Middle East were used to provide regular coverage over Afghanistan. The Boeing B-52H Stratofortress detachment on the British Indian Ocean Territory of Diego Garcia and B-1Bs at Thumrait in Oman, flew daily missions over Afghanistan. USAF McDonnell Douglas F-15E Strike Eagles and Lockheed Martin F-16s in Kuwait made forays over Afghanistan with the aid of extensive air-to-air refuelling support. They were soon to be joined by US Marine Corps McDonnell Douglas F/A-18D Hornets and French air force Dassault Mirage 2000s flying from Manas in Kyrgyzstan.

The priority for in-country air operations was given to helicopters for tactical support and C-130s for intra-theatre movements of troops around a network of dirt strips in remote areas of Afghanistan.

American military commanders were focusing on trying to hunt down any Al Qaeda personnel and senior Taliban leaders who had not fled to Pakistan in the aftermath of the fall of Kabul and Kandahar. Although the 7,000 US troops in Afghanistan had a small presence in most major urban areas, there were many towns and villages that had not yet been visited by international troops. US special forces teams used helicopters and C-130s to

fan out across Afghanistan, trying to pick up any intelligence on their elusive foes. When any tips were found, helicopter-borne raids by elite strike units held at high readiness at Bagram and Kandahar would be launched.

The 5,000-strong ISAF was focused on securing Afghanistan's capital and had no remit to operate outside Kabul. The UK, Canada, France, Germany, Australia, New Zealand, Denmark and Norway had all sent small special forces' teams who operated alongside their US counterparts in Operation Enduring Freedom missions to hunt down Al Qaeda remnants. A couple of Boeing Chinook HC.2As, of the UK Joint Special Forces Aviation Wing, based at Bagram Air Base to support the SAS Regiment squadron in Afghanistan, were the only non-US combat aircraft in the country at this time.

January and February 2002 saw a continuing series of raids, sweeps and air strikes against known or suspected Al Qaeda and Taliban hide-outs around Afghanistan. The large suspected Al Qaeda cave complex at Zhawar Kili in eastern Afghanistan was bombed on 2 January by four B-1Bs, four US Navy McDonnell Douglas F/A-18C Hornets and an AC-130 gunship.

US Army soldiers from the 101st Airborne Division (Air Assault), 3rd Brigade, prepare to board a Chinook helicopter in February 2002 in the build-up for Operation Anaconda. (USAF/Staff Sgt Derrick C. Goode)





Typical of these operations was a helicopter raid in February to capture

As US intelligence analysts got to work on all the leads their troops were collecting around Afghanistan, indications were growing that there was a large concentration of several hundred Al Qaeda fighters, including many senior commanders, in the Shah-i-Kot Valley in Paktia Province, near the mountainous border with Pakistan. US CENTCOM chief, General Tommy Franks, decided that a large-scale offensive was needed to trap and destroy the enemy fighters. To avoid a repeat of the problems that had bedevilled the drive to trap Osama bin Laden at Tora Bora in December 2001, the US military wanted US Army infantry troops to be involved in strength.

The plan for Operation Anaconda was complex and involved several military organizations – US, Afghan and allied – that were operating under different chains of command in the same small piece of territory. Airpower was central to the delivery of the assault and cordon forces, as well as providing supporting fire power. The operation soon went badly wrong and afterwards USAF and US Army commanders traded rhetorical blows about the poor performance of the air support.

Covert observation teams were first inserted onto three mountain peaks dominating the Shah-i-Kot Valley to try to locate the Al Qaeda positions. Then a Afghan militia force, led by US Army special forces teams, was

US soldiers load ammunition onto a waiting CH-47 Chinook helicopter for delivery to American and Afghan troops fighting in the mountains near Gardez, Afghanistan, during the Operation Anaconda offensive. (USAF/Master Sgt Keith Reed)

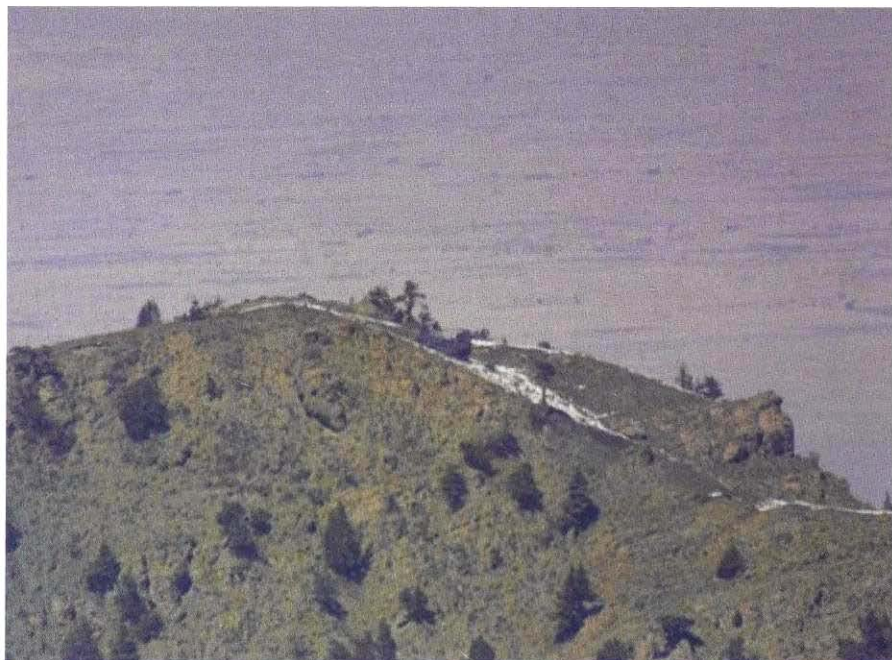


to launch a direct attack to drive the enemy fighters towards a cordon of US soldiers from the 101st Airborne and 10th Mountain Divisions, who were to be simultaneously dropped by Chinook helicopters in the hills on the eastern side of the valley. Escaping Al Qaeda fighters would either be picked off in the open as they escaped by Apache attack helicopters, killed by fast jets called in by US FACs or caught by the guns of the US paratroopers.

The operation kicked off in the early hours of 2 March with the advance up the valley by the Afghan militia force. USAF B-1Bs were to strike a series of targets on H-Hour to keep the enemy occupied while the Afghan militia convoy moved into position. Further fire support was provided by an AC-130. Things started to go wrong almost immediately. The first B-1B over the valley to bomb pre-planned targets, including 12.5mm Dshk heavy machine guns that were a grave threat to the in-bound CH-47 Chinooks carrying the paratroopers, suffered a technical fault after only six of its bombs had been released and had to call off its attack.

The next B-1Bs over the target area received an erroneous radio message to cease releasing weapons and did not drop all their bombs on their

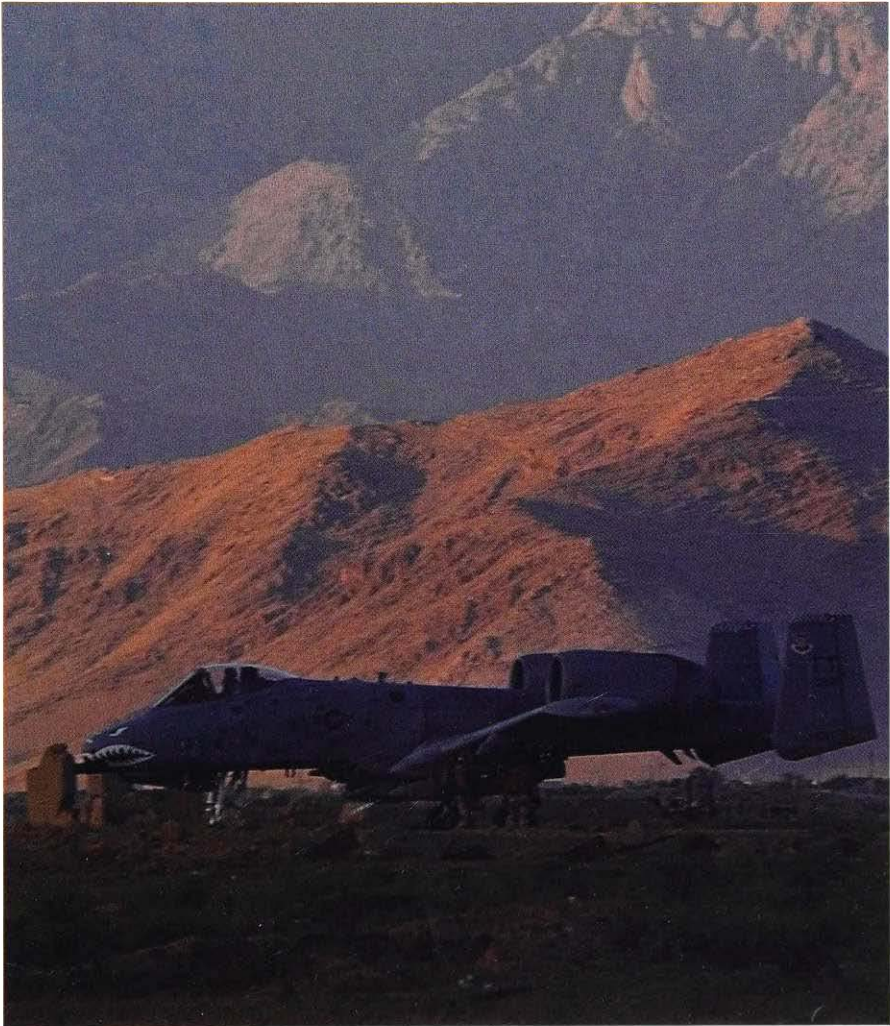
The remains of the MH-47E on the hill top known as 'Roberts Ridge' in honour of a US Navy SEAL commando killed during Operation Anaconda. (US DoD)



targets. A pair of F-15Es also ceased their attacks after hearing the same confused message.

Then disaster struck when a technical fault in the AC-130's navigation system led it to attack the Afghan militia convoy by mistake. Two militia fighters were killed and more than a dozen injured. Several of their US

A squadron of USAF A-10A Warthog ground attack aircraft were rapidly deployed to Bagram Air Base in the aftermath of Operation Anaconda. (USAF/Staff Sgt Ricky A. Bloom)



advisors were also wounded. The incident caused the militia attack to grind to a halt in confusion as the US medics tried to recover the wounded from wrecked trucks. It meant that the US troops, soon to be dropped off in the mountains by waves of Chinooks, would face a fully alerted and prepared enemy.

Just as the friendly fire incident was unfolding, US Army CH-47Ds were arriving at their landing zones to land hundreds of American soldiers. As they ran off the giant helicopters' ramps they came under unrelenting fire from AK-47s, heavy machine guns, rocket-propelled grenades (RPGs), mortars and light artillery. Fortunately, the Chinooks were escorted by five Apaches from the 3rd Battalion, The 101st Aviation Regiment, which was soon duelling with Al Qaeda machine gun teams at ranges of under 200 metres. The attack helicopters weaved across the battlefield to dodge heavy fire and re-position themselves to employ their guns, rockets and AGM-114 Hellfire missiles. The presence of the Apaches overhead diverted the attention of many of the Al Qaeda gunners and allowed most of the American troops to take cover and begin returning fire. For the rest of the morning the Apaches were in action over Shah-i-Kot but, as each helicopter ran out of ammunition,

A C-17 Globemaster III lands at Bagram Air Base to sustain the Operation Enduring Freedom airbridge. (DoD/Photographer's Mate 1st Class Arlo K. Abrahamson)





A French Air Force pilot walks away from his Mirage 2000 after arriving at Manas Air Base in Kyrgyzstan in February 2002 before joining the battles during Operation Anaconda. (USAF/Master Sgt Jerry King)

they peeled off and returned to a FARP fifty miles away from the battlefield. All of the helicopters were riddled with bullet holes or peppered with RPG shrapnel. One of the Apaches took a hit in the transmission and was rapidly losing oil. It landed within sight of the Al Qaeda fighters and, with the enemy too close to risk staying in position until a rescue force arrived, the crew had to top up their helicopter's transmission with oil. The helicopter started up and headed off for the FARP while still leaking oil. The crew miraculously made it but by midday all the Apaches were at the FARP undergoing repairs. Only two were fit to go back into action later that afternoon to make repeated attack runs to stop an Al Qaeda attempt to overrun an exposed US position.

By dawn, the Shah-i-Kot was the scene of the most intense battle involving US forces since the infamous 'Blackhawk down' incident in Somalia in 1993. Hundreds of American troops were pinned down and frantic calls for close air support were filling the US radio nets. USAF B-52s, F-15Es and F-16Cs were marshalled over the battlefield to drop scores of JDAMs or laser-guided bombs, as well as make repeated cannon strafing runs when attacks were needed close to friendly positions. The small size of the battlefield meant the airspace was very congested and controllers on the orbiting USAF Boeing E-3 Sentry AWACS had a challenging time making sure all the attack runs were deconflicted and all the aircraft did not fly into each other or drop bombs on top of each other. There were several close shaves during this confused period.

However, the choreographing of these air strikes was confused and slow at times because of the complex and inflexible chain of command of the US forces. The problem revolved around the fact that the US infantry units were calling in air support over a different chain of command to the US special forces' observation posts that ringed the battlefield. There was not one single headquarters prioritising requests for air support, so pilots would begin their attack runs and then be told to pull off to attack a higher priority target by a different controller.

Even with this confusion, US aircraft were hitting the enemy hard and inflicting scores of casualties, according to US special forces' observers who were watching the battle unfold.

As night approached, the main responsibility for close air support fell to AC-130s, which circled above the main US troop positions. USAF and CIA Predator UAVs were also positioned over the battlefield to provide senior officers controlling the battle from Bagram, Masirah Island and back in the US with real-time video feeds.

Heavy fighting continued through the next day with the US aircraft and attack helicopters pounding Taliban positions with increasing accuracy as the aircrews became more familiar with the battlefield and become more



A USAF C-130 Hercules from the 320th Air Expeditionary Wing, lands at a remote Afghan landing zone in support of Operation Enduring Freedom in October 2002. (USAF/Staff Sgt Aaron Allmon)

proficient at working with the US FACs on the ground. The scene was now set for one of the most controversial incidents of the battle.

Senior US special forces' officers at Bagram Air Base ordered that the personnel manning three observation posts monitoring the battle be replaced by US Navy SEAL commandos. They insisted that this happen during the coming night and the only way this could be achieved was by helicopter. A pair of MH-47Es from the 160th Special Aviation Operations Regiment were loaded with one of the teams destined to occupy Takur Ghar peak, which dominated the Shah-i-Kot Valley. As they approached the objective an AC-130 flew ahead to check out the landing zone and reported it clear of enemy fighters. Just as helicopters approached the objective, the AC-130 was called away to provide for other US troops under attack elsewhere.

The MH-47E approached the landing zone and was raked with enemy machine gun and RPG fire. It shuddered under the weight of fire and one of the SEAL operatives, Petty Officer Neil Roberts, standing on the rear ramp waiting to disembark, was thrown off the helicopter. The pilot immediately aborted the landing and flew away to safety. When it was realized that one of the SEAL team was missing a rescue mission was ordered.

Again, the complex special forces' chain of command hampered the effort to recover the missing American, with the new rescue force being made

by a senior officer to operate on a different radio frequency to that being used by the observation posts monitoring the battle. The rescue helicopter approached the same landing zone and this time managed to land its troops but was hit several times and was forced to make an emergency landing after limping away from the battlefield.

Now, a third helicopter carrying additional rescue troops approached the battlefield, but the changing of the radio frequencies meant it could not be alerted to the enemy positions overlooking the landing zone. This third Chinook was now severely damaged by enemy fire and could not escape from the killing zone, crashing close to the Al Qaeda positions. The survivors linked up with the first rescue force, who formed a desperate defensive perimeter. An AC-130 had provided protection for the beleaguered Americans during the night but as dawn approached it had to turn for its base after three man-portable surface-to-air missiles were fired at it. Evacuation was not possible during daylight and the US SEALs and Rangers on the Takur Ghar peak had to rely on a constant stream of F-15Es and F-16Cs making bombing and gun- strafing runs to keep Al Qaeda fighters at bay until the night. Under cover of darkness, the trapped Americans found a route to safety further down the mountain side, where a rescue force was waiting to load them on to helicopters to fly them back to Bagram. Eight Americans died during the confused battle on Takur Ghar peak, which had now been re-named Roberts Ridge.

US commanders were now aware that they faced determined and skilled opponents and moved quickly to step up their game. The convoluted special forces' chains of command were sorted out. An airspace management regime was put in place and more aircraft were drafted into the battle.

US Marine Corps Bell AH-1W Super Cobra gunships were flown to Bagram from amphibious ships sailing in the Arabian Gulf and sixteen more Apaches from the 101st Airborne were airlifted from the division's home base in Kentucky.

Two US Navy aircraft carriers were ordered to take up station off Pakistan to support the battle. Perhaps most significantly, the USAF was ordered to deploy a squadron of Fairchild A-10A Warthogs to Bagram to fly close air-support missions. By basing the 'tank buster' jets inside Afghanistan, the USAF would be able to fly sustained close air support for US troops and not have to rely on air-to-air refuelling to get fast jets into Afghan airspace. This would significantly increase their time on station during intense fighting, such as Operation Anaconda.

The fighting in the Shah-i-Kot valley continued for almost another week after the Battle of Roberts Ridge. The US troops did not move from their mountain-top positions but remained in place and choreographed wave after wave of US strike aircraft and attack helicopters onto targets in the valley



Canadian troops disembark from a US Army Chinook in the Tora Bora mountains during the operation in early 2002 to carry out forensic examination of caves previously occupied by Al Qaeda fighters. (US Army)

below. At its peak, more than 200 bombs a day were being dropped in a valley nine kilometres long and five kilometres wide. Eventually, a force of Afghan militia backed by tanks was mobilized to advance up the valley and this finally forced the Al Qaeda fighters to disperse. By the time the Afghan tanks rolled into the valley on 12 March it was deserted. There were scores of wrecked machine guns, mortars and several abandoned artillery pieces, as well as fewer than 100 bodies of dead fighters. Although senior US commanders claimed 1,000 Al Qaeda fighters were killed, America soldiers who visited the battlefield immediately after the end of Operation Anaconda estimated some 300 enemy personnel died and a similar number escaped into the mountains to find sanctuary in Pakistan.

Chapter 7

Light Footprint – 2002 to 2005

In the aftermath of Operation Anaconda the international military presence in Afghanistan settled into something of a routine. Much effort was expended trying to help build up the new Afghan government of President Hamid Karzai and at the same time continuing with offensive operations to try to prevent the resurgence of the former Taliban regime.

The US policy at this time was to only maintain what was termed a 'light footprint' of international military forces in Afghanistan in an attempt to avoid antagonizing the local population, who had a tradition of resisting violently any thing that could be seen as 'foreign occupation'. The Pentagon was also marshalling its forces for the upcoming invasion of Iraq that was scheduled for early 2003 and wanted to 'rest' key units ahead of the show-down with Saddam Hussein's army.

US Defense Secretary, Donald Rumsfeld, restricted US troop strength in Afghanistan to fewer than 10,000 personnel, while the ISAF was restricted to security operations around the capital with its 5,000 troops.

Air power therefore had a key role in moving the small US ground forces around the country and providing close air support if they got into trouble. The bed-down of air assets across the country continued, with Bagram, Kandahar and Kabul International Airport receiving serious attention to turn them into main operating bases for fixed-wing aircraft and helicopters.

The need to have strong fixed-wing close air support and attack helicopter forces operating from in-country bases meant that Bagram was identified as the main offensive hub, with a squadron each of USAF Fairchild A-10A Warthogs and USMC McDonnell Douglas AV-8N Harrier IIs in residence. The US Army and USMC deployed their McDonnell Douglas AH-64A Apaches and Bell AH-1W Super Cobra gunships at Bagram, Kandahar and FOB Salerno near the eastern border with Pakistan. Into 2003 and 2004, many of the US Army and USMC helicopter units rotated through Afghanistan were drawn from the reserves.



A US Army UH-60 Black Hawk helicopter transports soldiers to Jikdalek during August 2004, with an AH-64A Apache flying top cover. (DoD/Sgt 1st Class Sandra WatkinsKeough)

These aircraft and helicopters were the primary backup for US and coalition troops undertaking regular sweeps through the countryside hunting for elusive Taliban and Al Qaeda fighters. Air support continued to be on call from US fighter aircraft based in Kuwait, as well as USMC, NATO and French air force aircraft in Kyrgyzstan. USAF Boeing B-52 Stratofortresses based on the Indian Ocean Territory of Diego Garcia were on hand to deliver heavy fire power if there was a major incident.

US forces in the summer of 2002 and through to 2005 focused their offensive operations in the south and east of Afghanistan. A range of forces was employed in these missions, with special operations forces being in the forefront of them.

US Army special forces' units, backed by civil affairs and psychological warfare detachments, were used to mount regular sweeps into remote areas to try to pick up intelligence on enemy forces and recruit informants. They were regularly landed by Boeing CH-47 Chinooks or Sikorsky UH-60 Blackhawks, with top cover being provided by Apaches and Cobras. On some occasions, in very remote regions, parachute drops were executed to land US troops.

If large groups of Taliban fighters were located or suspected of having a presence, then infantry troops from the US Army or US Marine Corps would

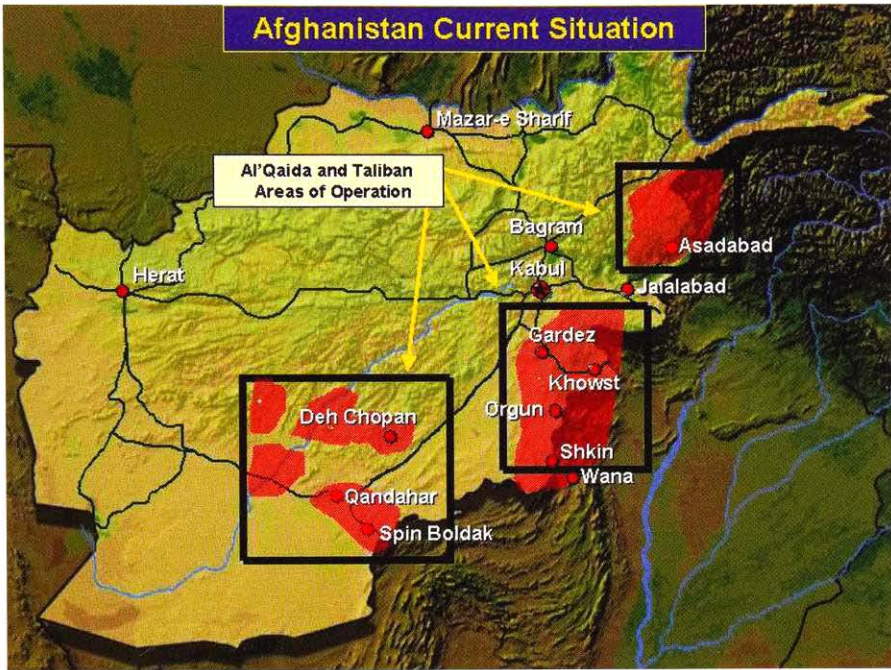
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Coalition aircraft such as this French Mirage 2000 had to rely on air-to-air refuelling to fly missions over Afghanistan during 2002 because of the lack of air base infrastructure to sustain them at in-country air bases. (USAF/Senior Airman Bethann Hunt)

Afghanistan's spectacular mountainous terrain provides a backdrop for a US Army UH-60 Black Hawk helicopter on a mission in August 2002. (US Army/Sgt 1st Class Sandra Watkins Keough)





Taliban activity portrayed in a Pentagon briefing map in 2003. (US DoD)

be mobilized and inserted by Chinook to cordon an area and then sweep through it.

If positive intelligence on high-value targets was collected then strike elements from the Combined Joint Special Operations Task Force (CJSOTF) were launched. These included elements of the secretive Delta Force, US Army Rangers, US Navy SEAL commandos and MH-47E helicopters of the 160th Special Operations Aviation Regiment (SOAR).

During the late spring and summer of 2002, these operations occasionally met small-scale resistance and US helicopters were sometimes engaged as they landed assault elements.

British and Canadian infantry units were requested by US Central Command to beef up the capabilities of coalition forces in Afghanistan to cordon and search areas of interest. The Canadians were used to protect a large operation to carry out a forensic or sensitive site search of the Tora Bora cave complex in May 2002. This was the area where Al Qaeda made its last stand in December 2001 and US intelligence wanted it secured so that the graves of fighters could be excavated and DNA samples taken to see



A US road convoy between Kabul and Kandahar in 2004 is escorted by a US Army AH-64A Apache. (US Army/Sgt Vernell Hall)

if Osama bin Laden or any of his relatives were killed in the fighting. The Canadians were flown up to the high mountainous region by CH-47 but encountered no major resistance. During the work-up for the operation near Kandahar airport in April, four Canadians were killed when they were bombed accidentally by a US Air National Guard Lockheed Martin F-16 Fighting Falcon, flying from Al Jaber Air Base in Kuwait. The pilot was subsequently found guilty of dereliction of duty for the incident.

At the same time, the 1,700-strong UK 3 Commando Brigade had deployed to Bagram to mount a series of cordon and search operations in Paktia Province. RAF Chinook helicopters were deployed with Royal Marines of 45 Commando for the mission, dubbed Operation Jacana. Like the Canadians, the British encountered little resistance during four major sweeps before they were withdrawn back to the UK in July.

As these combat operations were under way, other US and coalition troops began to establish a series of Provincial Reconstruction Teams (PRTs) in major towns and cities to help build up the Afghan government and distribute humanitarian aid. US and coalition aircraft and helicopters were

often called upon to carry out medical evacuation of civilians or deliver humanitarian aid to remote locations.

This reduction in combat activity, however, was interrupted by occasional tragic incidents such as an AC-130 gunship strike in July 2002 that mistakenly killed civilians at a 'wedding party' in southern Afghanistan. The air attack, which killed at least forty-eight civilians and injured another 117 in Uruzgan province, followed a nearby ground operation by US and Afghan troops. The US command in Afghanistan eventually calmed the situation by paying financial compensation to the relatives of the dead.

The number and intensity of combat incidents gradually subsided during 2003 and 2004, which led the US to ask NATO to begin taking over increasing responsibility for security around Afghanistan under the 'banner' of ISAF. German-led ISAF established the first ISAF Regional Command in the north of the country in October 2004. The German *Luftwaffe* set up a support base at Termez in nearby Uzbekistan for Sikorsky CH-53G Sea Stallion helicopters to fly casualty evacuation flights for the country's contingent in northern Afghanistan. ISAF nations also began running Lockheed C-130 Hercules

A US Navy SH-60 Sea Hawk helicopter flight crew waits to pick up disaster relief supplies in front of a US Army CH-47 Chinook and a Pakistani Mi-17 helicopter at Chaklala Airfield during the international relief effort after the 2005 Kashmir earthquake. (USAF/Tech. Sgt Mike Buytas)



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shuttles to their contingents in the north of the country. The UK established a battalion-sized task force at Mazar-e-Sharif in May 2003 and it had a dedicated Hercules to support it. In the autumn of 2004, the UK also deployed a squadron of BAE Systems Harrier GR7s to Kandahar to replace a squadron of USMC AV-8B attack jets. They were available to both the US and ISAF military commands for offensive and close air-support operations. This was the first deployment of non-US combat aircraft into Afghanistan. European F-16s began operating over Afghanistan as part of the US-led Operation Enduring Freedom in October 2002 with the deployment of Dutch F-16s to Manas Air Base in Kyrgyzstan. The Dutch, Danes and Norwegians each sent six planes for six months through until October 2003.

The next major test of US and allied airpower was the November 2004 presidential elections. Additional attack aircraft, bombers, tankers and support aircraft were made available to US and ISAF commanders in Afghanistan to provide extra capability during the election process. On election day, combat air patrols were maintained over all major towns and cities to deter incidents. Meanwhile, transport aircraft and helicopters were used to position security forces and move international observers around the country.

USAF C-130 Hercules ran a daily shuttle service around US bases in Afghanistan to move personnel and supplies to help US and coalition forces maintain a presence in all the country's major towns and cities. (USAF)



Bad weather, including heavy snowstorms and rain throughout the country during the winter of 2004–5, meant there was little military activity by either the Taliban, NATO or the US forces.

In February 2005, NATO announced that it would continue its expansion to take over the north-west of the country. Italy volunteered to lead this new mission and full NATO control was established at the end of May 2005.

The third European F-16 deployment occurred in 2005. This time, aircraft and personnel were sent to Kabul International Airport. Dutch F-16s began operating from Kabul in April 2005. The Belgian Air Force arrived that July, marking the first peacekeeping operation outside of Europe for them. The Expeditionary Air Wing formed by the two air forces was under Dutch command and operated eight F-16s, four Dutch and four Belgian. F-16s and personnel from Norway replaced the Flemish contingent in February 2006 for three months, when the Dutch returned.

The main calls for close air support came from US and coalition special forces' teams under the control of the US Operation Enduring Freedom headquarters hunting for Taliban and Al Qaeda elements. The units operated

Pakistani soldiers carry tents away from a US Army CH-47 Chinook helicopter in the city of Balikot as part of an international effort to bring aid to victims of the devastating earthquake that struck Pakistan in October 2005. The Chinooks were deployed from Bagram Air Base in Afghanistan for the relief mission. (US Navy/ Photographers Mate 2nd Class (AW/SW) Timothy Smith)





USAF Technical Sergeant Chris Robertson, of the 212th Rescue Squadron, attempts to contact his command unit in Islamabad, Pakistan, on a satellite telephone during the international effort to bring aid to victims of the devastating earthquake that struck the region in October 2005. (USAF/1st Lt Erick Saks)

in specific boxes of joint special operations areas (JSOAs) where more relaxed rules of engagement (ROE) were in force and conventional US and ISAF units were prohibited from entering to prevent friendly fire incidents occurring.

The first three years of the international mission in Afghanistan were blighted by several air accidents involving high loss of life, which highlighted the risks and dangers of flying in the central Asian country. Its high mountains, unpredictable weather and poor infrastructure of navigational aids led to even the most experienced airmen running into difficulties.

The most prominent incidents included: a loss of a US Marine Corps KC-130R in January 2002 in Pakistan with the loss of all of its seven crew when it hit a mountainside; a German Army CH-53G in Kabul in December

2002 to an engine failure with all seven crew; an Aviation World Services CASA 212 crashing into a mountain killing all six on board in November 2004; the loss of a US Army CH-47D in brown out on landing causing the deaths of all eighteen passengers and crews in April 2005; and the crash on landing of a Spanish Army AS532 helicopter in August 2005 with the loss of seventeen on board.

Accidents and technical problems were by far the most common cause of US and coalition air losses between 2002 and 2005, but incidents involving enemy action started to rise dramatically during the summer of 2005. The most serious incident occurred in June 2005 when a US 160th Special Operations Aviation MH-47D Chinook was shot down while trying to extract a US Navy SEAL team that had been ambushed by Taliban RPG teams in Kunar province in eastern Afghanistan. As the helicopter approached its landing zone, it was hit by RPGs and small arms fire, causing it to crash with the loss of all seventeen personnel on board. This seemed to indicate that the lessons of the Battle of Roberts Ridge in 2002 had been well learnt by the Taliban.

RAF Harrier GR7As were dispatched to Kandahar Airfield, Afghanistan, in 2004 to operate in support of NATO's ISAF and the US-led Operation Enduring Freedom. (Tim Ripley)



The level of US air activity steadily rose during 2005 as insurgent attacks started to increase, with some 7,421 close air support sorties being flown, involving the release of 176 munitions in 2005 compared with 6,495 close air support sorties dropping only eighty-six munitions in the previous year. The war in Afghanistan seemed to be on again.

Chapter 8

Battles in the South – 2006

During 2006, the nature of the war in Afghanistan changed fundamentally, as fighting ranged across the south of the country. US and NATO air operations reached a peak in September as Canadian-led alliance forces swept into a Taliban stronghold west of the city of Kandahar and British paratroopers battled to hold a series of isolated so-called 'Platoon Houses' in the north of neighbouring Helmand Province. According to US Central Command Air Forces, which was responsible for orchestrating the expanded air campaign in Afghanistan, in September alone allied aircraft flew 1,441 close air support sortie, 183 intelligence, surveillance and reconnaissance (ISR) sorties and dropped 706 air weapons. This data excluded weapons fired by US, British and Dutch attack helicopters.

Unlike the air campaigns during the Kosovo conflict in 1999 and the invasion of Iraq in 2003, which saw the employment of strategic airpower against large fixed targets, the 2006 air offensive against the Taliban saw alliance aircraft intervening in battlefield situations, either helping NATO troops under attack or striking at groups of insurgents massing to attack towns controlled by pro-Kabul government forces. To NATO air commanders, this was a highly challenging scenario that severely tested their air-land integration command structures and put enormous responsibility on alliance pilots to find, identify and then attack fleeting targets in confusing battle conditions.

During the author's visit to RAF's IV Squadron at Kandahar Airfield in September 2006, a Harrier GR7A pilot who had just returned from a mission to help Afghan army troops expressed frustration that he could not find a good target to strike. Apparently, the Taliban had dressed up in Afghan police uniforms and infiltrated army positions in the south of Helmand province. In the confused close-quarters fighting with both sides wearing the same uniforms, it was impossible to work out who was whom, so the Harriers had to return to base with their weapons still on board. 'There was

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nothing I could do,' said the pilot who was dripping with sweat after several hours in the baking hot cockpit of his jet.

Several NATO countries began deploying troops into the five provinces of southern Afghanistan during the spring of this year as part of a strategy to gradually take over responsibility for security of the region from US forces. The region is the heartland of the former Taliban regime and its tribal allies, which meant the influence of the pro-western Kabul government was limited to a few large towns. Out in the countryside the Taliban were in control and were re-forming their guerrilla army with the help and financial support of local heroin producers. NATO intelligence estimated that across southern Afghanistan the Taliban could draw on the services of up to 10,000 heavily armed fighters.

NATO's plan saw some 2,200 Canadian troops securing Kandahar province, more than 3,300 British troops operating in Helmand province, a 1,600-strong Dutch and Australian force was responsible for Uruzgan

The USAF A-10 Warthog ground attack jet from the 81st Expeditionary Fighter Squadron at Bagram Air Base, Afghanistan, was in the forefront of the air campaign in southern Afghanistan during the summer of 2006. (USAF/Airman 1st Class Lonnie Mast)





NATO artillery and air assets bombard a Taliban position around the Canadian-manned Patrol Base Wilson in Kandahar province in August 2006. (CMND/MCpl Yves Gemus)

province, and 2,200 US Army troops remained in control of Zabol province. A multi-national NATO brigade, led by a Canadian brigadier general, was to control alliance operations working with Afghan government forces, across what was dubbed Regional Command South (RC South).

The sheer size of RC South's area of responsibility, its mountainous and desert terrain and poor state of road links meant NATO commanders were expecting to rely on fixed-wing aircraft and helicopters to move the troops around and keep them supplied, as well as provide rapid reaction fire power to intervene if isolated contingents of troops came under attack.

The heart of its air support effort was the huge US-controlled air base, some twenty-five miles to the south of the regional capital Kandahar. Known as Kandahar Airfield or KAF, it was home to some 8,000 US and NATO personnel in April 2006 and this had soon increased to nearly 12,000. As well as being the gateway for air transport flights bringing in troops and supplies, the air base was home to US, British and Dutch attack and transport helicopters. US Air Force MQ-1 Predator UAVs were also based at KAF and next to their small compound was the flightline of the RAF's Harrier detachment. The poor condition of KAF's Soviet-era runway significantly influenced air operations during 2005 to 2007 because it meant that plans to establish a forward-operating base for Royal Netherlands Air



A Canadian soldier throws a smoke grenade and marshals a US Army UH-60 Black Hawk helicopter onto the Helicopter Landing Site (HLS) at Patrol Base Wilson. Helicopters of the 10th Mountain Division's Task Force Knighthawk were deployed at Kandahar Airfield to support Canadian troops throughout 2006. (CMND/Sgt Lou Penney)



A US Navy F/A-18C Hornet, of Strike Fighter Squadron Eight Six (VFA-86), launches from the bow as another F/A-18C Hornet is directed onto the steam-driven catapult aboard the nuclear-powered aircraft carrier USS *Enterprise* (CVN 65) in the Northern Arabian Sea during September 2006. (US Navy/Mass Communication Specialist 2nd Class Milosz Reterski)

Force F-16A/B Fighting Falcons could not take place, forcing the RAF to keep its short take-off and vertical landing (STOVL) capable Harriers in situ. The six (later seven) Harriers were to play a crucial part in the summer's battles because they were the only forward-based offensive strike aircraft and were not dependent on tanker support.

Operating from dust-coated Kandahar Airfield is not without its dangers. The airfield had been hit by four Taliban rockets in September 2006 alone. During this barrage, gunners of the RAF Regiment's 34 Squadron captured an eight-strong Taliban rocket team after they brazenly fired their weapons in broad daylight, according to Wing Commander Andy Knowles who led the RAF force protect effort at the airfield. The squadron deployed in May to join US, Romanian, Danish and Portuguese force protection units guarding Kandahar Airfield. RAF Regiment officers soon set up a new headquarters to co-ordinate all the multi-national defences at the air base, which had been under regular rocket attack for most of the year.

No British personnel were killed in the rocket attacks but two Canadian soldiers and five US civilian contractors were wounded in June. 'Our patrols have driven the rocket teams out to the limit of their range and so they have

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to “shoot and scoot”’, said Knowles. ‘Now we sound rocket alerts when the weapons are in the air, so our people can take cover in time.’

The transition of RC-South from US to NATO command was a complex procedure that was not formally achieved until the end of July 2006, even though the majority of the NATO troops were in place by early June 2006. For the NATO air forces this meant a subtle but important change in the way they co-ordinated their support for ground forces in Afghanistan. Up to the transition of authority, the US-run Air Support Co-ordination Center (ASOC) at Bagram Air Base in eastern Afghanistan was responsible for generating a daily request for air support to the US Central Command Air Force (CENTAF) at the Combined Air Operations Center (CAOC) at Al Udeid Air Base in Qatar. Air planners at the CAOC turned these requests, along with a similar one from US commanders in Iraq, into the daily Air Tasking Order (ATO). Staff at the CAOC said this was necessary to allow for scarce strategic enabling assets, such as airlift, air-to-air refuelling tanks and ISR platforms, to be allocated to each theatre in a coherent manner.

B-1B Lancers were then transferred to the 379th Expeditionary Air Wing at Al Udeid Air Base in Qatar from Diego Garcia in the summer of 2006 to better support ISAF forces in Afghanistan. (Tim Ripley)





An air strike by a RAF Harrier GR.7A as seen through the pilot's head-up display.
(Kandahar Media Pool)

Once the transfer of authority from the US to NATO occurred, air planners in the alliance's ISAF headquarters in Kabul took over responsibility for requesting air support from the CAOC. The ISAF commander, Lieutenant General David Richards, issued his staff with broad outlines and they made detailed daily air plans with their counterparts in the CAOC.

While air support was centrally planned, the fluid nature of the battlefield meant NATO pilots never flew against pre-selected targets. All targets were identified by troops on the ground during fighting with Taliban and then Joint Terminal Attack Controllers (JTAC) or FACs who were responsible for 'clearing' jets to attack. The JTACs were NATO's key battle-winning asset, according to alliance commanders. Each team was four to five strong and was equipped with a range of targeting systems and communications devices. British, Canadian, Danish and Dutch JTACs all had laser range-finder and night vision equipment, as well as UHF/VHF and satellite radios. US Army and special forces' JTACs had the added benefit of laptops that could send data messages with target co-ordinates direct to US aircraft. They also had ROVER video terminals that allowed the downloading of imagery direct from Predators in real-time. This capability had the added benefit of allowing ground troops to use air assets as their own eyes in the sky, to search behind hills or building for groups of Taliban.

NATO's move into southern Afghanistan was expected by the Taliban who began massing in the north of Helmand province to head off the arrival

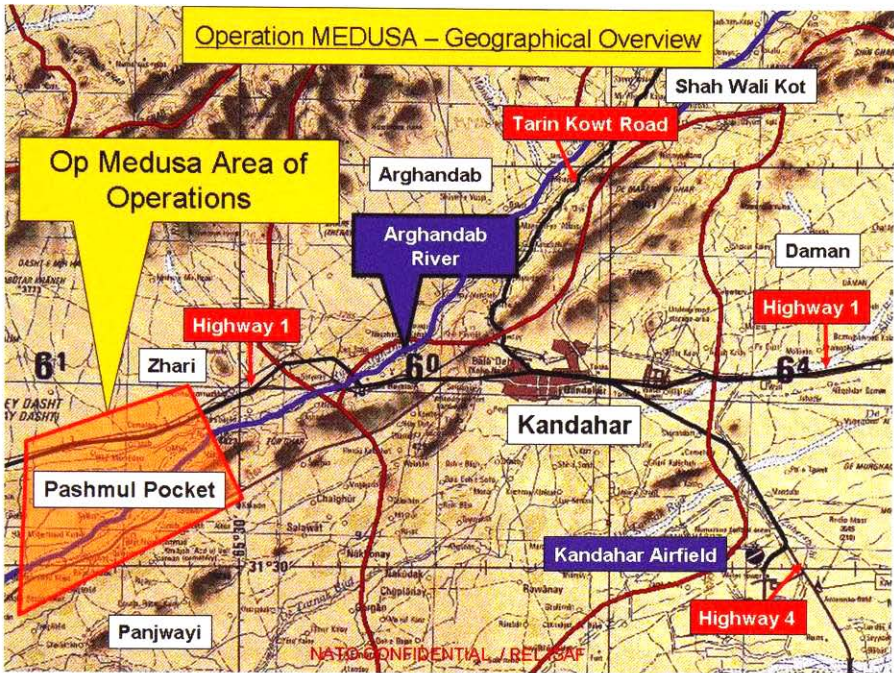
of British paratroopers of 16 Air Assault Brigade. More than 3,000 Taliban fighters, backed by tribal militias and drugs producers, besieged Afghan police and Afghan National Army (ANA) troops in a series of 'district centres' in Now Zad, Musah Qalah, Kajaki and Sangin. Unable to hold out in Kajaki, a small detachment of US and French special forces retreated southwards in late May 2006, only to be ambushed by hundreds of Taliban. Two Frenchmen were killed, along with dozens of ANA troops.

With the Taliban on the verge of winning a major victory, the US military, at this point still responsible for RC-South, decided to launch Operation Mountain Thrust to drive them back. British troops from the 3rd Battalion, The Parachute Regiment, who had just arrived in their newly built base at Camp Bastion in Helmand, were alerted to counter-attack, backed by a battalion-sized task force from the US 10th Mountain Division.

In early June, RAF Chinook HC2s of 27 Squadron, supported by Apache AH.1s from 9 Regiment Army Air Corps (AAC), flew company-sized groups

British Army Apache AH.1 attack helicopters of 9 Regiment Army Air Corps were active every day to protect British and NATO troops besieged in Platoon Houses across Helmand province. (Tim Ripley)





Operation Medusa, September 2006. (ISAF)

northwards to reinforce the district centres, which were soon fortified and became popularly known as Platoon Houses. Each paratrooper garrison, supplemented by an RAF Regiment JTAC team, soon found themselves fighting desperate battles for survival. The US Army battalion set up its own base in Musah Qalah, backed up by CH-47D Chinook and AH-64A Apache helicopters of Task Force Nighthawk.

These bases soon became magnets for hundreds of Taliban fighters mounting daily attacks. Taliban snipers, machine gunners, mortar and rocket teams took aim on an hourly basis, with occasional human wave charges thrown in for added discomfort. Re-supply flights by Chinooks attracted particular attention from the Taliban, who had most landing zones covered by fire.

British Army commanders now turned to airpower to provide a ring of steel around the Platoon Houses. Day after day, A-10s, Harriers, B-1Bs and Apaches were called upon by the JTACs to hit Taliban positions. Some air strikes were so 'close to the wire' that paratroopers had to dive for cover. During August, British and NATO JTACs called down 160 air strikes on Helmand province, with 100 being conducted around Musah Qalah



RAF Harriers based at Kandahar all sported dozens of bomb mission markings to signify the intensity of air operations over Afghanistan during the summer of 2006. (Tim Ripley)

alone. One Army Air Corps pilot said that these confused battles often saw Apaches escorting Chinooks into hostile territory, while fast jets and artillery were in action in the same piece of air space, requiring very high quality co-ordination to prevent accidents.

The battles for the Platoon Houses came to a climax towards the end of August when senior British commanders were considering pulling their troops out of them because their supplies were getting dangerously low and the risk of a Chinook being shot down was getting too high.

The determination of the paratroopers to hold on proved successful, when the tribal elders in the town of Musah Qalah demanded to talk to the British to ask for a truce. After suffering some hundreds of casualties, the local village militia fighting with the Taliban in the town had apparently had enough. By the middle of September, the number of contacts or engagements, had dropped from twelve a day on average to less than half that number. Throughout the province the British claimed to have killed more than 1,000 Taliban fighters.

In neighbouring Kandahar province a very different battle was unfolding between Canadian troops and a force of more than 3,000 Taliban fighters, who were gathering in the Panjwaii district, some twenty miles west of Kandahar city. NATO intelligence thought the Taliban were poised to launch a direct attack on the provincial capital and plans were put in place to trap and then kill the bulk of their fighters.

The Canadians had already launched four sweeps through Panjwaii but the Taliban had always melted away into the countryside. This time the aim was to seal the ring tight around them. US and British special forces' teams were inserted around the Taliban stronghold. The RAF deployed its Hawker Siddeley Nimrod MR2 surveillance aircraft to supplement the USAF's Predators to monitor all potential Taliban escape routes. The importance of this ISR effort can be gauged by the fact the RAF deployed a dedicated Tristar tanker aircraft to the Omani air base used by the Nimrod force to ensure one was always on station over the battlefield. The USAF also called up its squadron of half a dozen B-1Bs to Al Udeid Air Base in Qatar from the

RAF Harriers were held on strip alert at Kandahar Airfield and they were often the first aircraft to respond to requests for close air support from ISAF troops in contact with Taliban fighters. (Tim Ripley)





RAF Nimrod MR2 aircraft provided real-time surveillance for British troops in Afghanistan, via their MX-15 video cameras and Longhorn datalinks, from July 2006 onwards. (USAF/Staff Sgt Matthew Hannen)

British Indian Ocean island of Diego Garcia to be closer to the action and the USS *Enterprise* was moved to the North Arabian Sea to bring it within range of southern Afghanistan.

It took much of the latter half of August for NATO to mass all the troops and airpower it needed to seal off Panjwaii province. The RAF and Task Force Nighthawk Chinooks played a vital role moving the troops and their support equipment into place in time for Operation Medusa to begin on 2 September. The opening hours of the operation were far from auspicious, with a Nimrod crashing after it exploded in mid-air after a fire with the loss of fourteen crew. As Canadian troops moved forward towards the Taliban positions they were ambushed; air support from US A-10s was called up and in a tragic error one of the Warhogs strafed the lead Canadian company, killed one soldier and injured more than thirty. This rendered the lead company inoperative as the rest of the soldiers moved in to deal with a mass casualty event. USAF HH-60 Rescue Hawks from Kandahar were scrambled to pick up the wounded.

With Canadian troops now bogged down in close-quarter fighting in a series of walled compounds, it was now time for the JTACs to come into play. They co-ordinated a constant stream of air strikes against Taliban positions, involving USAF A-10s and B-1Bs, US Navy Hornets and Super Hornets, Dutch F-16s, French Mirage 2000Ms and RAF Harriers. This airpower was used in combination with Dutch and Canadian 155-mm artillery and US HIMARS multiple-rocket launchers. These latter weapons were fired from the end of the runway at KAF.

Strike aircraft embarked on USS *Enterprise* began their support missions for Operation Enduring Freedom on 3 September. By early October, they

had flown more than 450 sorties and delivered more than 100 precision weapons against Taliban targets during Operation Medusa.

For almost three weeks, NATO aircraft pounded away at the Taliban in Panjwaii until the Taliban started to crack. The village militia were soon fleeing the battlefield, where NATO claimed more than 1,000 fighters had been killed. Only some 200 of these were claimed to have been killed in ground fighting with Canadian troops, illustrating NATO's tactics of relying on airpower to blast through Taliban lines.

NATO's General Richards claimed Operation Medusa was a major defeat for the Taliban, which he hoped would open a window for the delivery of reconstruction aid to southern Afghanistan. Taliban activity appeared to be dramatically reduced by NATO success but the insurgent group was far from defeated. A large group of Taliban fighters remained active in southern Helmand province and into October was battling with ANA troops, supported by US and British special forces, for control of the town of Garmister. Again, NATO air forces provided strong support for their comrades on the ground, inflicting heavy casualties on the Taliban.

The surge in fighting was signified by the fact that in 2006, US and NATO strike aircraft flew some 11,528 sorties and dropped 2,644 munitions at a ten-fold increase compared with 2005. Events would prove that the heavy fighting during the summer of 2006 was just a prelude to a more intense round of conflict between Taliban insurgents and international military forces.

Chapter 9

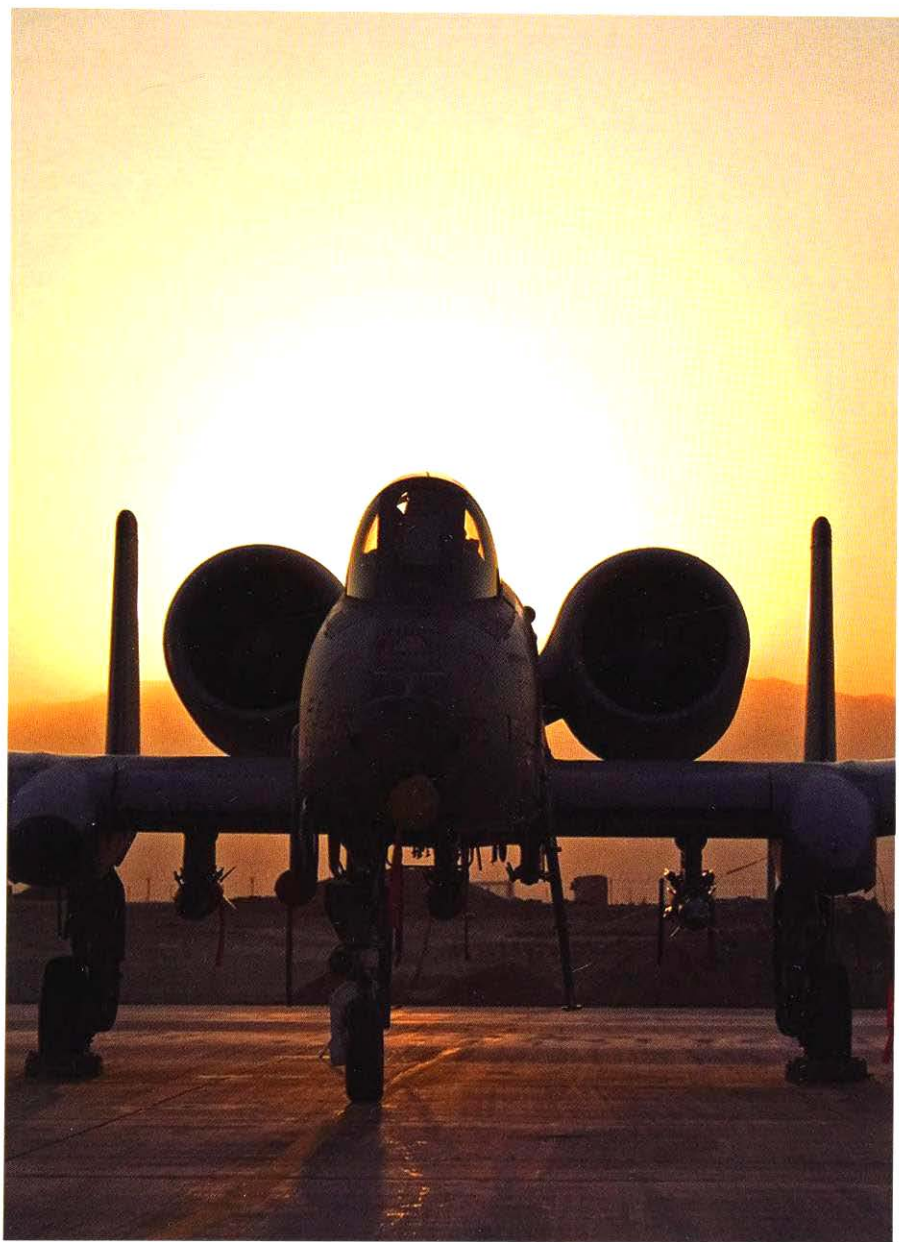
NATO'S War – 2007 to 2008

At the start of 2007, much of south-west Afghanistan was in the hands of Taliban insurgents and their tribal allies. NATO and Afghan government troops controlled only the major towns and cities.

Afghanistan's south-west is predominately populated by Pashtun tribes and there was great suspicion of President Hamid Karzai's government in Kabul, which was seen as being dominated by Tajiks and Uzbeks from the north. The Afghan National Army (ANA) and police were perceived as being 'northern' by many Pashtun. Provincial and district governors sent from Kabul were seen as foreigners and commanded little respect or loyalty from local people in the south, so by 2007, the three most heavily populated provinces in the south-west – Kandahar, Helmand and Uruzgan – were in open revolt. The Taliban played on these grievances and portrayed themselves as the protectors of the population against the corrupt 'puppet' government in Kabul and his 'infidel' foreign protectors, the US and NATO. A network of Taliban shadow governors ran most of the countryside and the back alleys of the towns in the south. Supply lines from Pakistan brought in weapons, ammunition and a stream of jihadist volunteers from Middle Eastern countries to sustain the fight against NATO troops.

The heavy fighting of 2006, particularly Operation Medusa, taught the insurgents that NATO airpower would devastate them if they tried to mass in order to take on ISAF troops in conventional stand-off fighting. So they reverted to classic guerrilla tactics, hiding among the population and breaking cover on their terms. Whenever International Security Assistance Force (ISAF) columns made forays into the countryside, they were ambushed by insurgents or detonated buried improvised explosive devices (IEDs).

NATO forces in southern Afghanistan in the first months of 2007 boasted only some 10,000 lightly armed and equipped ground troops. Western governments were still digesting the shock of finding that the Taliban had decided to fight the ISAF move into the south. Reinforcements and extra



Sunrise over Bagram Air Base and a USAF A-10 Warthog in November 2007. (USAF/ Col Tim Grams)

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equipment were being prepared but it would be several months before they could be deployed in Afghanistan. In the meantime, ISAF's Regional Command South (RCS) would have to rely on airpower to protect its outnumbered and isolated troops from insurgent attack.

The main hub of NATO airpower in southern Afghanistan was Kandahar Airfield (KAF), to the south-east of Kandahar city. This sprawling former Soviet base was home to a squadron of British BAE Systems Harrier GR7 jump jets and once major runway repairs were completed later in the year, they would be joined by a squadron of Dutch Lockheed Martin F-16 Fighter Falcon jets. A detachment of USAF General Atomics MQ-1 Predator UAVs provided persistent surveillance and attack support.

British, US, Dutch and Australian helicopters were based at KAF in strength, including McDonnell Douglas AH-64 Apache attack helicopters, Boeing CH-47D Chinooks and Sikorsky UH-60 Blackhawks. These helicopters operated from a network of forward arming and refuelling points around the RCS area to give them range and endurance.

A formation of US Army UH-60 Blackhawk helicopters fly over a C-130 Hercules from the USAF's 317th Airlift Group at Bagram Air Base in September 2007. (USAF/ Staff Sgt Joshua T. Jasper)





USAF Special Operations Command combat controllers give a C-130 Hercules take-off clearance and provide air traffic control during a mission to establish and assess a dirt airstrip in March 2007 to allow the delivery of supplies. (USAF/Staff Sgt Jeremy T. Lock)

NATO was also in the process of building up KAF into their main 'air point of disembarkation' (APOD) for the arrival of new troops and equipment from outside Afghanistan.

During early 2007, the UK, US and Australia began to build up their special forces' helicopter units at KAF as part of their enhanced 'decapitation' strategy to target the leadership of the Taliban in southern Afghanistan. This involved the extensive use of signals intelligence or eavesdropping aircraft, including RAF Hawker Siddeley Nimrod R1s and Boeing RC-135 Rivet Joints, to monitor Taliban radio traffic. This intelligence provided vital cues for the USAF Predators and RAF Nimrod MR2s, which would then 'stake out' suspect Taliban bases while special forces' teams were readied for action.

During 2007, some twenty decapitation attacks were launched by UK and US special forces in southern Afghanistan. These were invariably launched

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at night and involved helicopter troops landing to surround isolated compounds where suspected Taliban leaders had been detected. Predators and Nimrod MR2 aircraft equipped with full motion video cameras would provide 'overwatch' for the raids, spotting Taliban fighters trying to escape or the build-up of enemy troops trying to counter-attack.

The major task of NATO airpower was protecting and sustaining ISAF troops across the southern region. A rotation of strike aircraft was maintained over the south on a 24/7 basis so troops in contact with enemy forces could always count on having close air support on hand to protect them. These combat air patrols included USAF Rockwell B-1B Lancer bombers flying ten-hour missions from Al Udeid in Qatar, as well as McDonnell Douglas F-15E Strike Eagles and Fairchild A-10As operating out of Bagram Air Base near Kabul without air-to-air refuelling support.

The KAF-based British and Dutch Harriers and F-16s joined these patrols or were held on strip alert to scramble to help troops under threat. Around the south, Apache attack helicopters were also on strip alert at Camp Bastion in Helmand province, Camp Holland at Tarin Kowt in Uruzgan and at KAF itself to respond to calls from help.

A US Army Chinook lands at a remote forward-operating base to deliver supplies and reinforcements. (CMND)



Daily close air support missions could involve calls for help from ISAF bases under small arms, mortar and rocket attack, ambushed patrols in remote locations or supply convoys under attack. Joint terminal attack controllers (JTACs) with the ground troops would use any aircraft sent to support them first to scout out the ground and find the enemy. An escalatory ladder of responses was authorized by the rules of engagement, including low passes popping flares to scare off insurgents, strafing runs using cannon fire and ultimately air strikes with precision-guided laser and satellite-guided bombs.

All the NATO air assets in the southern region were in heavy demand during 2007 and 2008, with multiple airstrikes by fixed-wing aircraft taking place on a daily basis and attack helicopters being in action around the clock.

For the helicopter force, a major part of their daily work was the sustainment of NATO troops around the south. CH-47s from the UK, US, Netherlands and Australia were heavily tasked, delivering food, water, ammunition and other equipment to remote FOBs. Helicopter re-supply avoided the risk of Taliban ambush or IED attack on road convoys. The distances involved and Taliban anti-aircraft artillery threat meant that almost every re-supply flight had to be escorted by Apaches or fixed-wing jets. Some of this burden was taken up by supply drops by Lockheed C-130 Hercules aircraft but the requirement for re-supply always exceeded the air assets – fixed and rotary wing – available.

The top priority for NATO helicopter units was to maintain 24/7 medical response capabilities to evacuate casualties back to hospitals at Camp Bastion or KAF. RAF and Dutch Chinooks, US Army UH-60s and USAF HH-60 Pave Hawks were all kept on around-the-clock alert ready to pluck wounded soldiers and civilians to safety in less than an hour. This vital task took up 25 per cent of the UK Chinook assets in Afghanistan on every day during 2007.

NATO ground commanders were convinced that they needed to adopt an aggressive strategy to take the war to the Taliban to try to expand the area

AUSAF HH-60G Pave Hawk combat search and rescue helicopter taxis to the launch pad during August 2007 at Bagram Air Base, illustrating the intensity of traffic at the main US air hub in the country. (USAF/Staff Sgt Samuel Morse)





A Royal Netherlands Air Force F-16 Fighting Falcon takes off from Kabul to support ISAF troops in southern Afghanistan. During 2007 the Dutch fighter detachment relocated to Kandahar Airfield to be close to the action. (RNLAF)

under the Afghan government control, to intercept Taliban supply lines and forestall attempts by Taliban fighters to mass their forces.

British Army and Royal Marines commanders were leading advocates of what they called the 'manoeuvrist approach' and they tried wherever possible to create mobile operations groups to launch deliberate operations to attack the Taliban.

During the first four months of 2007, the Royal Marines 3 Commando Brigade mounted a series of ambitious operations in southern Helmand to interdict Taliban supply lines around the town of Garmsier and into a region known as the 'Fish Hook'. Highly mobile Royal Marine columns mounted in Land Rovers and Viking all-terrain vehicles staged raids against Taliban-held villages along the Helmand river valley. These columns were re-supplied by Chinooks and Hercules to extend the time they could remain on patrol and prevent the Taliban fixing their location by tracking ground supply convoys. When the Royal Marines attacked they always had fixed-wing and attack helicopter support, including top cover from Nimrod MR2s or Predators to prevent Taliban reinforcements from massing to counter attack.

One of these raids achieved notoriety in February 2007 when a Royal Marines attack force was ambushed and had to withdraw. In the confusion, one marine was left behind in the Jugroom Fort. A Royal Artillery Lockheed Martin Desert Hawk mini-UAV located the body of the marine inside the fort. Fearing the wounded or dead Marine would be seized, Royal Marine commanders wanted to launch an immediate rescue mission. The only helicopters on hand were a pair of Army Air Corps Apaches of 656 Squadron. Four marines volunteered to strap themselves to the weapon pylons of the helicopters and fly into the fort to attempt a rescue. The daring mission met little resistance and the marines were able to load the body of their dead comrade on the helicopters to be flown back to safety.

The British-led Task Force Helmand was keen to launch a series of deliberate attacks around its province to break up suspected concentrations

A cloud of smoke from coalition bombings can be seen in the distance as Taliban fighters resist when Canadian Forces, US and Afghan National Army (ANA) soldiers searched areas within the Zjarey district, west of Kandahar. (CMND/MCpl Robert Bottrill)





German *Luftwaffe* Tornado reconnaissance aircraft were deployed to Mazar-e-Sherif in northern Afghanistan in April 2007 to augment ISAF's air contingent. (ISAF)

of Taliban fighters. These usually involved a company's worth of troops being moved by Chinooks, with top cover from Apaches and Nimrods.

Dutch, US and Australian troops fought an intense battle with hundreds of Taliban fighters in and around the town of Chora in Afghanistan's Uruzgan province, during 15–19 June 2007. Taliban forces tried to seize control of the Chora district centre, regarded by the Taliban as a tactical target because it provides ground access from unsecured Gizab district in the north to the provincial capital of Tarin Kowt. ISAF troops called in air support from USAF A-10As, Dutch F-16s and Apaches to drive off the attackers, but the fighting resulted in the death of one American soldier, one Australian soldier, two Dutch soldiers, sixteen Afghan soldiers and some fifty-eight civilians.

During late October, Canadian troops surrounded around 300 militants near Arghandab in Kandahar province and killed at least fifty of them with the help of NATO air support.

The UK also provided RCS with its reserve infantry battalion and this unit was regularly launched on air assault missions into Taliban-held territory.

The most extensive of these in the summer of 2007 involved a move into Uruzgan province, backed by the re-deployment of more than half of the British Apache contingent and Viking vehicles, which were moved from Helmand by C-130s and landed on a dirt landing strip.

The British command in Helmand spent the latter half of 2007 preparing the ground for major deliberate operations to win back the town of Musah Qalah, which had been seized by the Taliban earlier in the year. A large air package of jet strike aircraft, B-1B bombers, Nimrod ISTAR and Predator UAVs, co-ordinated by a USAF Boeing E-3C Sentry AWACS aircraft, was planned to support the assault on the town.

While columns of British and Afghan troops manoeuvred across the desert in the first week of December 2007 to surround the town, a battalion of US paratroopers were flown to its outskirts to take the Taliban fighters by surprise in twelve US, UK and Dutch Chinooks. The defenders initially put up strong resistance to the helicopter-landed troops and machine gun fire forced one of the supporting US Army Apaches to make an emergency landing.

When the Taliban realized that the British and Afghans were poised to surround the town, their leaders ordered a retreat and soon the town was secured. Keeping the ground columns re-supplied soaked up a major portion of available UK and US helicopter resources. This operation also involved a significant portion of the NATO fixed-wing and UAV assets in southern Afghanistan. Its success was a major boost to the morale of NATO and Afghan government forces.

The summer fighting season of 2008 saw additional UK and US troops deployed in Helmand to try to increase the pressure on the Taliban. Britain's

US Marines of the 24th Marine Expeditionary Unit load three AH-1W Super Cobra helicopters onto an USAF C-17 Globemaster III in March 2008 at Manas Air Base, Kyrgyzstan, prior to being forward deployed to Kandahar to reinforce ISAF troops in southern Afghanistan. (USAF/Senior Airman Tabitha Kuykendall)





An Italian Air Force AB-212 helicopter flies over western Afghanistan during an ISAF mission in October 2008. (ISAF/TSgt Laura K. Smith)

16 Air Assault Brigade returned to Helmand in May 2008 and set about conducting several battalion-sized air assault operations around Helmand.

The UK continued to provide the reserve battalion for NATO's southern regional command through the summer of 2008 and this unit, 3rd Battalion, The Parachute Regiment, was involved in air assault operations across Helmand, Kandahar, Zabul and Uruzgan provinces.

During the summer, the UK brigade began preparatory operations ahead of a major mission to move a new power generation turbine from Kandahar Airfield to Kajaki dam to the north of Sangin. This was to involve almost every battalion and helicopter in the UK task force, along with extensive fixed-wing air support, including aircraft from two US Navy carriers. Operation Eagle Summit started on 27 August and saw a huge airborne ISTAR effort to monitor its five-day progress through Kandahar and Helmand provinces.

To help the British in Helmand, the US Marines of the 24th Marine Expeditionary Unit (MEU) began operating around the town of Garmsir in the south of the province in late April 2008. Its troops moved into the town and staged a series of sweeps in outlying villages for the next four months, backed by Bell AH-1W Cobra gunships, Sikorsky CH-53E Sea Stallion heavy-lift helicopters, Bell UH-1N Huey light helicopters and McDonnell Douglas AV-8Bs, which supported the unit from Kandahar airfield during their mission.

US forces in the east of Afghanistan found themselves facing increasing harassing attacks on their outposts along the border with Pakistan. The most serious occurred on 13 July when 200 Taliban fighters attacked a US base position near the village of Wanat in Waygal district in the far eastern province of Nuristan. The Taliban surrounded the remote base and its observation post and attacked it from both the village and the surrounding farmland. They destroyed much of the Americans' heavy munitions and even broke through the American lines entering the main base before US soldiers managed to repulse the attacking militants, thanks to the intervention of AH-64 attack helicopters and a Predator firing Hellfire missiles. They appeared over the base with close air support about thirty minutes after the battle began. Later, a B-1B Lancer bomber, A-10 and F-15E aircraft were called in to strike insurgent positions. The attackers withdrew about four hours later.

Civilian casualties again reared their head when an air strike in the remote village of Wech Baghtu in the southern province of Kandahar on 5 November destroyed an Afghan housing complex where women and children had

A USAF C-17A Globemaster II delivers US Marines of the 24th Marine Expeditionary Unit to Kandahar Airfield in March 2008 as part of the effort to deploy the unit to Afghanistan. (USAF)



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gathered to celebrate a wedding. After the attack, Afghan President Hamid Karzai pleaded with US President-elect Barack Obama to put an end to air strikes by US warplanes that resulted in civilian deaths.

This issue had become very emotive during 2008 after US aircraft bombed a wedding party in Nangahar province on 6 July, killing forty-seven civilians. The independent group Human Rights Watch issued a report later in the year that blamed many of these casualties on confusion during close-quarter battles, where isolated and outnumbered NATO troops and over-stressed, FACs and pilots did not have time to adequately assess the situation before calling in air strikes. It assessed that 116 civilians were killed in NATO and US air strikes in 2006 and 321 the following year. In the first nine months of 2008 some 138 civilians were killed in air strikes, said the group. It said the deliberate raids by aircraft on pre-planned targets were less likely to result in civilian casualties and called for a tightening of the rules of engagement (ROE) for the employment of air strikes during troops in contact (TIC) incidents. The Taliban were also accused by the group of using civilians as 'human shields' during battles with NATO troops.

The 24th Marine Expeditionary Unit brought with it an AV-8B Harrier II attack jets detachment with it to Kandahar to give it airborne firepower. A Canadian KC-130 lands behind the Harriers. (USMC)



NATO air commanders responded by claiming that initial reports of civilian casualties were often used by Taliban propaganda teams to discredit NATO and try to make coalition troops more cautious about calling in air support. NATO commanders said the Taliban greatly feared airpower as NATO's most potent battlefield weapon and wanted to make it as difficult as possible for it to be used.

During 2007 and 2008, NATO airpower was used at a level that far surpassed the sortie rates and bombs dropped in 2006. This surged to 13,962 close air support sorties and 5,198 munitions dropped in 2007 and then to 19,092 attack sorties in 2008, with 5,051 bombs dropped in 2008.

Chapter 10

UAV War Afghanistan

US and coalition operations in Afghanistan since 2001 have seen the unprecedented use of unmanned aerial vehicles (UAVs). Afghanistan has seen hundreds of UAVs, of all shapes and sizes, from small hand-held systems that can be carried in a soldier's rucksack up to giant air Northrop Grumman RQ-4 Global Hawks the size of Boeing 737 airliners.

The use of many of these systems was pioneered in Afghanistan in 2001 and 2002, before being matured during the larger and far more violent war in Iraq between 2003 and 2008. With the focus of US and coalition efforts switching to the central Asian country again after the election of President Barack Obama, Afghanistan is again becoming the venue of renewed expansion of UAV activity.

Central to growing UAV operations in Afghanistan are the USAF's fleets of General Atomics RQ/MQ-1 Predators and MQ-9 Reapers. Popular media coverage of the Predator and Reaper nearly always concentrates on the fact that their pilots control these 'robot planes' or 'drones' on missions over war zones in Iraq and Afghanistan from the safety of Creech Air Force Base in Nevada. This is inevitably followed by comments that within minutes of firing missiles at enemy targets on the other side of the world, the pilots can be at home watching television or having dinner with their families. This is portrayed as the first stage of the removal of the 'human' element from warfare.

Although the Predator and Reaper undoubtedly incorporate some very advanced technologies, their success in USAF service over the past decades stems from efforts made by the US military, the CIA, their manufacturer, General Atomics, and other civilian contractors to incorporate the UAVs into a end-to-end weapon system that can be easily used by front-line troops and commanders. Far from being a 'robot' or 'drone', the daily employment of the Predator and Reaper involves large numbers of humans in several

locations, stretching from the front line in Iraq and Afghanistan back to bases in the continental United States.

The USAF Predator and Reaper force boasted more than 200 air vehicles and several thousand personnel working at more than twenty bases around the world in early 2010.

Twenty years ago the Predator had not been invented and was not even part of USAF future procurement plans. It owes its existence to work by a team of engineers working for the California-based company General Atomics Aeronautical Systems Inc (GA-ASI) and support from the CIA who early on saw the potential of controlling UAVs via satellite data links. The result was the Gnat 750, which flew in 1992 using satellite control. Up to this point UAVs had to be controlled by line-of-sight radio systems. Satellite control meant the Gnat 750 and its successor the Predator could be flown hundreds of miles from its launch point, over terrain that would block radio signals from traditional ground control stations and imagery could be transmitted by satellite anywhere in the world. This was a major advance in UAV development and established a new class of UAV.

Over the past twenty years, the Predator has evolved considerably thanks to a number of key technology developments. During the 1990s, the Predator was solely a national command or theatre-level surveillance asset. The Kosovo war in 1999 saw the Predator develop into a strategic- or theatre-level attack

An MQ-9 Reaper unmanned aerial vehicle being prepared for a training mission at Creech AFB, in Nevada, which is the global operations centre of US and UK UAV forces. (Philip Coburn/UK Media Pool)



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asset with the installation of laser range finders in the Predator's sensor ball to allow the creation or mensuration of target co-ordinates for satellite- or laser-guided munitions. This was quickly followed by a decision to arm the Predator with Lockheed Martin AGM-114 Hellfire laser-guided missiles but this modification was not fully flight tested until early 2001.

Only a few months before the 9/11 attacks, the technology for remote or split site operation (RSO) came on line to allow pilots in control centres far from the launch point to fly the Predator. This meant that only a few dozen personnel could be sent to operate a launch and recovery element in an operational theatre, allowing the pilots, mission planners, communication specialists and intelligence needed to execute Predator missions to remain at bases back in the US. This dramatically increased the operational flexibility of the system and its rapid deployability.

A USAF MQ-1 Predator returns to Bagram Air Base, after a mission over Afghanistan. The Predator is gradually being replaced by the bigger and more capable Reaper. (USAF/Master Sgt Demetrius Lester)





The Global Hawk is the USAF's long-endurance, high-altitude UAV, has multiple battlefield applications and is capable of surveying an area the size of the state of Illinois, or 40,000 square miles, in just twenty-four hours. It operates over Afghanistan in co-ordination with USAF U-2 Dragon Lady spy planes. (USAF)

The next most important piece of technology that has transformed the Predator is the remote video terminal, which is generically known as the ROVER terminal. This allows the direct transmission of imagery from the Predator into a laptop-sized terminal used by ground troops only a few yards from enemy positions. This at a stroke removed several layers of military bureaucracy and gave front-line troops direct control over Predator operations. Previously only senior commanders in remote headquarters had been able to watch Predator video feeds and details of the imagery had to be laboriously radioed to front-line troops. The deployment of hundreds of ROVER terminals in Iraq in 2004–5 transformed the Predator into a system that could be used by even the most lowly infantry soldier. Not only could they more quickly call down close air support on enemy positions, but front-line troops could benefit from watching video imagery streamed directly into their ROVER terminal from a Predator. Without the ROVER

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terminals, ambitious plans to dramatically expand Predator usage would have stumbled because downloaded imagery would have become bottlenecked inside large headquarters far from the front line.

Since the US Predator force was committed to operations in Afghanistan after the Al Qaeda attacks on New York and Washington in September 2001, it has expanded ten-fold and is now involved in almost every aspect of US and coalition operations in Afghanistan.

The launch and recovery element (LRE) teams at Bagram and Kandahar in Afghanistan have to mainly keep a constant flow of air vehicles landing and taking off to maintain the necessary combat air patrols (CAPs). Each LRE contains a handful of pilots and sensor operators who control the air vehicles during landing and take-off, as well as controlling them for operations to protect the launch site from insurgent attack.

The execution of Predator and Reaper operations on a continuous basis is only possible by the widespread use of satellite communications. It allows the re-broadcast of radio traffic from pilots and sensor operations at RSO locations in the US to Iraq and Afghanistan, so JTACs on the ground can

RAF Reaper operations over Afghanistan are controlled from Creech AFB in Nevada. Pilots and sensor operators have access to huge intelligence data bases and communications links. (Tim Ripley)





The British Army started leasing Elbit Hermes 450 tactical UAVs in 2007 to give it surveillance coverage around its bases in high-threat areas of Helmand province. (Thales)

speak to UAV crews on the same basis as the crews of fixed-wing aircraft. This allows the JTACs to re-direct air vehicles to specific locations and sensors to be focused on individual targets. These satellite radio links are then used by the JTACs and UAV aircrew to go through ROE check lists for the employment of weapons. As the pilot and sensor operators are talking to JTACs out on the ground in Afghanistan, intelligence analysts working at the back of the control cabins at the RSO sites are using on-line intelligence data bases to make sense of the imagery. Experts at other locations in the US or ground headquarters in the Middle East are consulted by internet chat rooms. Image comparison software is also run by the intelligence analysts to determine if changes have occurred since imagery was last collected of specific locations to help spot hidden arms cache or buried improvised explosive devices (IEDs).

For missions that are highly sensitive and involve co-operation with US Special Operations Command and CIA personnel on covert operations, the USAF has established three secretive UAV units. The personnel of these units are believed to have 'ultra-high' level security clearances and been indoctrinated into some of the most secret operations undertaken by the US military and intelligence agencies. The 17th Reconnaissance Squadron (RS) is described on the Creech AFB website as:

... the USAF's first weaponized and only dual-qualified MQ-1/ MQ-9 squadron. The squadron conducts worldwide operations as tasked by senior US government officials using special tactics and capabilities for persistent, real-time reconnaissance, target tracking,

and destruction. The 17th RS continuously operates UAS around the globe to collect intelligence and destroy high-value targets in support of national strategy.

The 3rd Special Operations Squadron (SOS) is the only Predator unit assigned to US Special Operations Command (USSOCOM) and operates from Cannon AFB in New Mexico and Nellis AFB in Nevada.

The 17th RS and 3rd SOS have the ability to deploy their own LREs during covert operations as well as control air vehicles on discrete 'compartmentalized' missions. The RSO concept also means that aircrew from the two squadrons can take over and operate air vehicles launched from mainstream USAF LREs.

Perhaps the most shadowy USAF unit is the 30th RS, which the Creech AFB website describes as a 'flight test squadron based at the Tonopah Test Range in Nevada'. The mysterious nature of the unit was enhanced in December 2009 when the USAF revealed it operates the jet-powered Lockheed Martin RQ-170 Sentinel 'stealth UAV'.

Outside the US is a network of LREs to put Predators and Reapers into the air on a daily basis. The LRE in Afghanistan at Bagram and Kandahar are the



The RAF re-activated 39 Squadron at Creech AFB in Nevada in January 2007 to operate MQ-9 Reapers in Afghanistan.

(Tim Ripley)



Imagery from a RAF Reaper over Afghanistan showing its weapon load. (Tim Ripley)

responsibility of the 62nd Expeditionary Reconnaissance Squadrons (ERS). LRE detachments are manned by maintenance personnel detached for three to four months at a time from Creech, Holloman and the reserve component bases in the US. These personnel carry out routine maintenance, pre-flight checks, weapons loading, launch and recovery activity and basic battle-damage repairs. The USAF also regularly augments its LREs overseas and in the US with contract personnel from a number of civilian companies, including General Atomics, L3 Communications, Battlespace Flight Services and Xe (formerly Blackwater).

The USAF, US Army and US Marine Corps have deployed hundreds of mini-UAVs to Afghanistan to provide close surveillance. These included the Lockheed Martin Desert Hawk, AeroVironment RQ-11 Raven, RQ-14, and the US Naval Research Laboratory Dragon Eye Unmanned Aerial Vehicle,

which are either hand-launched or fired from small catapults and have small cameras with downlinks to beam images into laptop computer-like control devices. They are valued for their ability to protect small bases from attack.

Afghanistan has not been a good place to deploy so-called medium or tactical UAVs because of the country's mountainous terrain, which plays havoc with the line-of-sight communications links needed to control them and the hot-high climate severely limits their performance.

The Canadians deployed the Sagem Spewer to Kabul in 2002 to 2004 and Kandahar from 2005 with some success as a local area surveillance asset but its short range meant it could not be used to support offensive operations far from bases.

Britain has been the largest and most successful user of UAVs in Afghanistan after the US. In 2004, the UK started to assign personnel to the US Predator base at Creech and two years later it placed an order for Reapers. The following year the RAF reformed 39 Squadron to operate the Reapers. They have been flying in Afghanistan from Kandahar Airfield since October 2007 but have only been weaponized since 23 May 2008 after crews completed a training and certification package run by the USAF.

A French Air Force squadron began operating IAI Harfang UAVs at Bagram Air Base in February 2009 as part of France's expanded mission in Afghanistan. (USAF/Senior Airman Felicia Juenke)





Canadian soldiers recover a Sprewer UAV after it landed in the desert on 6 July 2006 near the launch point at Kandahar Airfield in southern Afghanistan. (CMND/MCpl Robert Bottrill)

By early 2009, the UK UAV operation at Creech had expanded considerably with the UK contributing some ninety personnel to 39 Squadron, in support of the USAF's 432nd Air Expeditionary Wing. As well as contributing its personnel, the UK had two General Atomics MQ-9 Reaper UAVs and a number of ground control stations in service, which are used as part of a multi-national pool of equipment. The RAF shares the USAF's satellite command and control system for its Reapers and also shares a common pool of weapons. UK Reapers were forward deployed in Afghanistan to be operated by a multinational launch and recovery element (LRE) that shares an operating site at Kandahar Air Base in southern Afghanistan. US



A Desert Hawk mini-UAV of the USAF's 438th Force Protection Squadron makes its final approach for landing at its base in Afghanistan. The mini-UAV aircraft provides air bases with another layer of defence, without putting lives at risk by transmitting live footage to the operator to survey the perimeter of the base. (USAF/ Staff Sgt William Greer)

and UK aircrews based in the US could 'fly' any of the aircraft depending on the tasking schedule.

The British Army was also keen to gain access to its own UAVs and in 2007 secured funding to lease Hermes 450 tactical UAVs from the Israeli company Elbit. Soldiers from the Royal Artillery's 32 Regiment were trained to operate the Hermes 450 after retiring their GEC-Marconi Phoenix, which lacked the performance to fly in Afghanistan's hot-high conditions. The small size of the British area of operations in Helmand meant the Hermes systems could give good coverage and the region is one of the few relatively flat areas in Afghanistan, so its line-of-sight control systems did not inhibit operations too much.

In August 2009, UK Prime Minister Gordon Brown announced that Hermes 450 operations in Afghanistan were being stepped up to counter the Taliban IED threat. This will see 32 Regiment add an extra tasking line or daily Hermes 450 mission to its operations, above its current weekly average of nineteen sorties over some 205 flight hours. In the first two years of operations in Afghanistan the regiment had amassed 16,500 flight hours.

Other ISAF contingents have moved to deploy large UAVs of the Predator or Hermes 450 class to give them better surveillance capabilities. The Italian air force has operated three Predators in Afghanistan since 2008 and in 2009 it purchased Reapers with the intention of replacing its older UAVs.

The Israeli Aerospace Industries (IAI) Heron 1,000-km range UAV has been purchased or leased by four ISAF nations to date. This Predator class UAV has the ability to download imagery into ROVER terminals and can be controlled via satellite data links.

The first nation to deploy the Heron 2/TP was France in February 2009, which had purchased the air vehicles via the EADS company. The French Ministry of Defence designated the UAV as the *Système intérimaire de drone MALE (SIDM)* or 'Interimary medium-altitude, long-endurance drone system' Eagle but the country's air force called it the 'Harfang'. Three air vehicles were originally purchased but one was badly damaged in an icing accident in March 2009, so an additional one was purchased in July 2009 for EUR 33.7 million (about \$49 million).

The French Adour Squadron operated the Harfang at Bagram Air Base alongside USAF Predators and Reapers and by April 2010 had flown some 2,000 hours in the first year in Afghanistan. The French Army contingent in the Tora region, east of the Afghan capital, has also been operating the SDTI tactical drone systems since 2008. This short-range system can carry out surveillance missions by day and by night, out to a distance of 80 kilometres from its control station. The system has a four-hour average endurance,

The Luna UAV. (ISAF)





Elbit Systems Hermes 450 unmanned aerial vehicles based at Camp Bastion have been flying daily missions over Helmand province since 2007. (Thales)

variable according to the weather conditions and altitude. After its flight, the drone is recovered using parachutes and inflatable cushions on a zone chosen in advance.

Simultaneously with the French deployment, Canada's Joint Task Force – Afghanistan (JTFAfg) Air Wing at Kandahar Airfield began receiving its first leased Herons, dubbed CU170 Heron. IAI delivered the first Heron UAV system to the Canadian Air Force in October 2008 under the Noctua contract, valued at C\$95 million (\$81 million). The IAI and MacDonald Dettwiler and Associates Ltd (MDA) were appointed prime contractors to deliver IAI's Heron UAV through MDA to Canadian Forces (CF). The CU170s were operated by Canadian Forces personnel and maintained by contractors. The Noctua contract was for two years of deployed operations up to the end of 2012 with options to extend for up to twelve months.

The Canadians wanted to use the UAV in line-of-sight mode and require the air vehicles to remain on station for at least twelve hours, at a point at least 100 kilometres away from the operating base.

During 2009, the German air force signed a lease for IAI Heron 1 UAVs and they deployed to Mazar-e-Sharif Air Base in early 2010 to support ISAF operations in northern Afghanistan. Two ground stations and three Heron UAVs, with one acting as a spare, were to be leased by the German Federal Office of Defence Technology and Procurement from Düsseldorf-based prime contractor and IAI partner Rheinmetall Defence. The agreement was to run for one year, with an option for two more years.

Australia followed soon after and signed a similar lease agreement for Heron UAVs, with the first system to be delivered during December 2009 to become operational in early 2010 for one year. Options also existed to potentially extend the arrangement by two more years.

The Heron UAVs will support deployed Australian forces in Afghanistan under Project Nankeen, with the system to be operated by the Royal Australian Air Force.

The Afghan war has seen an unprecedented use of UAVs and they have become indispensable to US and NATO forces. UAVs are often portrayed as a means to remove human pilots from danger but the absence of a major Taliban threat to NATO aircraft flying at high altitude means that this feature is not really utilized in Afghanistan. Many NATO commanders, however, see the main benefit of UAVs in the Afghan theatre as their persistence and their ability to stay over targets on a near continuous basis. NATO now has an unprecedented ability to observe Afghan battlefields.

Chapter 11

Enabling Operations – Airlift and Tankers

Afghanistan's land-locked location, demanding internal terrain and under-developed land communications infrastructure mean that the US and its allies have had to turn to airlift to enable almost every aspect of their operations in the central Asian country since 2001.

As international military operations have evolved, then so have airlift support missions as new air routes and air bases have opened up. Closely related to airlift support is the provision of air-to-air refuelling support, which enables all types of aircraft to conduct sustained missions in Afghan airspace.

During the opening phase of conflict in late 2001, US-led airlift operations focused on the insertion of ground forces into Afghanistan, often in high-risk situations onto unsecured airfields and rough landing strips at night. These operations were carried out by highly trained aircrews of special operations units, flying specially equipped aircraft such as the Lockheed MC-130 Combat Talon. These aircraft have terrain-following radar, high-end defensive aid suites and thermal imaging night vision systems.

The MC-130s of the USAF's 16th and 352nd Special Operations Wings (SOW), support by RAF Lockheed Hercules C.1/3s of the Special Forces Flight of 47 Squadron, were in the forefront of these missions in October and November 2001 into a series of desert strips to drop off raiding and reconnaissance parties. They then led the way to flying troops and diplomatic teams into newly captured airfields in Mazar-e-Sharif, Bagram, Kabul and Kandahar. Once engineering, air traffic control, radar and security elements were put in place in these airfields, a wider range of military and civilian aircraft began to flow into them. Everything international forces needed at this time – from ammunition to food and even paper for computer printers – had to be flown into Afghanistan because its shattered economy had no capacity to provide anything.



A USAF C-17 Globemaster drops a Combat Delivery System supply pallet to coalition soldiers waiting below during an air drop in Paktika province in October 2007. (US Army/Spc. Micah E. Clare)

The US-led CAOC at Prince Sultan Air Base in Saudi Arabia controlled all air activity over Afghanistan and set up air control measures to ensure transport aircraft were kept safe from hostile threats and coalition military activity. The main control measures were a series of air corridors into Afghan airspace and a landing slot system at the few functioning airfields in the country. Until significant ground security forces were positioned around the airfields in Afghanistan, the Regional Air Movements Control Centre (RAMCC) at Al Udeid Air Base in Qatar allocated landing slots at night-time only to prevent man-portable surface-to-air missile (MANPAD) or machine gun attacks on aircraft on final approach or take-off.

In these early days, a crucial factor in airlift operations was the lack of bulk fuel supplies in-country, which meant any aircraft heading into Afghanistan had to have enough fuel on board to carry out their mission and return safely to base. This made the establishment of a series of forward-mounting bases in the Middle East and Central Asia vital to projecting transport aircraft into Afghanistan. The US used its existing bases in Uzbekistan,



The crew of a USAF C-130H Hercules watch for ground threats during a take-off from Kandahar Airfield. (USAF)

Kyrgyzstan, Kuwait, Qatar, Oman, Pakistan, Turkey and on the British Indian Ocean Territory of Diego Garcia to marshal its airlift resources. The UK chose to set up its air-mounting operation at Thumrait in Oman; the Canadians, Italians and Australians worked through Minhad in the United Arab Emirates; while the Germans and French used Central Asian air bases.

The US also had at its disposal significant numbers of air-refuellable transport aircraft, including the strategic Boeing C-17A Globemaster. This allowed it to launch aircraft direct from the continental USA or Germany and refuel them in the air on approach to Afghanistan with enough fuel to land in-country and then take off again. The procedure could be repeated on the return leg as well, if necessary, giving the US military the unprecedented ability to rapidly move cargo and people in and out of Afghanistan. While the tactical, operational and strategic flexibility of this capability was immense, it came with a huge price tag in terms of the pre-positioning of tanker and fuel around Afghanistan; it also required large numbers of aircrew to be on

The first Canadian Leopard main battle tanks arrived at Kandahar Airfield in August 2007 after being flown to Afghanistan on a USAF C-17 Transport Aircraft. (USAF/Sgt Lou Penney)





A row of C-17 Globemaster IIIs and a RAF VC-10 at Incirlik Air Base in Turkey during the initial phase of Operation Enduring Freedom in 2001. The base continued to be the main hub for aircraft heading to Afghanistan. (USAF/Senior Airman Matthew Hannen)

hand to ensure crew rest time constraints were sustained. The on-going nature of the US commitment to Afghanistan meant that the USAF's Air Mobility Command (AMC) had to manage its personnel, aircraft and fuel very carefully to ensure they did not suffer 'burnout' so early in the campaign.

During 2002, the US and the International Security Assistance Force (ISAF) set in train ambitious plans to build up the in-country air base infrastructure. The US worked to establish Bagram and Kandahar Air Bases as their main airlift hubs. Red Horse engineering teams and civilian contractors repaired runways and taxiways, built air traffic control towers, installed radars and navigation aids, brought in aircraft unloading equipment and started to build up fuel stocks. This latter aspect was a priority because it would allow the refuelling of airlifters on the ground in Afghanistan and significantly increase operational flexibility, as well as allowing tactical combat aircraft and helicopters to be based in-country. Through 2001 and into 2002, the US military and its allies had relied on air delivery of fuel, which was expensive, time consuming and could not deliver the quantities of fuel needed to sustain the international military mission in Afghanistan in the long term.



A Russian Volga-Dnepr AN-124 long-range heavy transport aircraft takes off from Moffett Federal Airfield in California, carrying USAF helicopters to Afghanistan. Both the US and NATO make extensive use of both Russian and Ukrainian chartered Antonovs to supply their forces in Afghanistan. (USAF/Master Sgt Daniel Kacir)

The way forward was to hire local trucking companies to start delivering fuel from Pakistan and Central Asian countries. This dramatically reduced the cost of delivering fuel to Afghanistan and allowed reserves of fuel to be built up. It also had a major spin-off in terms of injecting money into the local economy, which helped reduce Afghanistan's chronic unemployment rate.

Over the next eight years, as the size of the international force in Afghanistan grew to over 100,000 troops, the level of airlift support required grew to keep level. These troops had to be deployed, supplied and returned home at the end of their six- or twelve-month tours of duty. Political and security issues in Pakistan and in Central Asia meant that almost all uniformed military personnel heading for duty in Afghanistan had to be flown in and out of the country. Also, sensitive military supplies, such as ammunition, combat vehicles and communication equipment, had to be delivered by air as well. The US and UK military alone relied on air transport for in excess of 70 per cent of the logistic requirements. Food, fuel and other non-combat items could be moved by surface transport but a series of

attacks on US and NATO convoys in Pakistan during 2008 and 2009 showed how precarious the land routes were.

The quantities of supplies needed by US and NATO forces meant that by 2009, they were increasingly turning to the private air charter market for aircraft to move material to Afghanistan. Hiring east European Ilyushin Il-76s and Antonov An-124s also reduced the pressure on scarce military heavy-lift aircraft. Even the UK and US air forces found they were stretched to find the number of aircraft needed to move the hundreds of mine resistant and ambush protected (MRAP) vehicles required by US and NATO troops in Afghanistan during 2009. NATO nations banded together in 2006 to form the Strategic Airlift Interim Airlift Solution (SALIS) to jointly lease An-124 aircraft from Russian and Ukrainian companies. The NATO C-17 Heavy Airlift Wing joined the international air bridge to Afghanistan in late 2009.

To try to ease the pressure on their air bridges, the UK and US set up a series of forward-mounting bases in the Middle East, as well as on Cyprus and Diego Garcia. Ships would deliver cargo to them and then chartered

RAF C-17 Globemaster IIIs are bearing the brunt of sustaining the UK airbridge to Afghanistan, flying in outsized cargos, including armoured vehicles and dismantled helicopters. (Tim Ripley)





The bulk of UK military personnel are flown into Afghanistan on RAF Tristar C2 transports that boast an advanced self-defence system. (Tim Ripley)

aircraft would carry it on the short final leg into Afghanistan. This meant more sorties could be flown daily and more cargo moved in-country.

Both the US and NATO put considerable effort into setting up intra-theatre airlift networks inside Afghanistan. The country's primitive road network and the threat of insurgent attack meant that aircraft were the quickest and safest way to move between major cities or NATO bases. US and NATO planners established a network of more than twenty airfields and airstrips that were capable of taking C-130 class aircraft. These could be activated and security forces deployed to protect them when cargo or personnel needed delivering or collecting. The daily 'milk run' services are flown around the country by several aircraft dropping and picking up items and people. This had a major impact on the ability of the US and NATO commands in Afghanistan to function and is particularly important when civilian or military casualties need to be rapidly moved to medical facilities. Aircraft on the 'milk run' could be rapidly diverted to pick up wounded and move them to where they can be treated. The size of Afghanistan means this type of mission was just beyond the range and endurance of most types of helicopter.

The battered underside of a RAF C-130J at Kandahar Airfield illustrates the heavy toll that landing on improvised airstrips takes on the Hercules aircraft in Afghanistan. (Tim Ripley)





An RAF Hercules lands at Kandahar while a construction team repairs the airfield's battered runway. For a large part of 2006 and 2007 the repairs severely hampered air operations at the base and limited the size of aircraft that could land at it. (USAF)

As fighting with Taliban insurgents intensified in 2006 onwards, the need to rapidly re-supply isolated NATO outposts or mobile columns rose up the agenda. Truck convoys became vulnerable to enemy improvised explosive devices (IEDs) and helicopters were threatened by MANPADs, rocket-propelled grenades and small arms fire. The answer in many cases was parachute drops from C-130s. These had the advantage of being able to take place at ranges far in excess of those possible by helicopter. Also, the dropping aircraft flew high above the battlefield, out of sight and sound of the enemy in many cases. The USAF employed GPS-guided pallets to dramatically increase accuracy. While the technique was highly praised by troops moving on mobile patrols out in the Afghan desert, those occupying fixed locations were less keen because of the need to recover supplies from predictable drop zones that were frequently attacked.

Next to airlift, air-to-air refuelling is by far the most important enabling capability available to US and NATO air commanders in Afghanistan. The whole of the invasion phase in 2001 would not have been possible without the lavish US and UK air-to-air refuelling support effort. Almost every

aircraft and helicopter that entered Afghan airspace in October 2001 did so using air-to-air refuelling.

Subsequently, the importance of air-to-air refuelling decreased as air base facilities were established in-country to allow the full spectrum of air power to operate from local air bases. This has progressively evolved over time.

In 2002, for instance, the US and its allies continued to rely on air-to-air refuelling to allow fast jets based in neighbouring countries to strike at targets in Afghanistan. By 2009, more than 100 fast jets were based in-country, but a couple of tanker tracks were always maintained over Afghanistan to give fast jets the ability to refuel in the air in case the tactical situation on the ground required a massing of air power. Intelligence-gathering aircraft have continued to rely on air-to-air refuelling to extend their time on station over Afghanistan.

Air-to-air refuelling is a far from benign activity and requires high levels of pilot skills, excellent communications and co-ordination. The dangers of air-to-air refuelling operations were highlighted in 2006 when a UK Hawker

Chartered Ilyushin Il-76s augment the fleet of An-124s in the US and NATO re-supply effort to Afghanistan. (Tim Ripley)



Siddeley Nimrod MR2 patrol aircraft suffered a fuel leak after refuelling over southern Afghanistan. All fourteen crew on board were lost when the leaking fuel ignited and the aircraft exploded in mid-air.

During the 2001 invasion phase a Boeing E-3D Sentry AWACS was used almost exclusively to manage the flow of aircraft onto several tanker tracks

Fuel is passed from the boom of a 44th Expeditionary Air Refueling Squadron KC-10 into another KC-10. US and NATO air commanders always have air refuelling aircraft on hand over Afghanistan to top up jets needed to deal with sudden emergency 'troops in contact' incidents. (USAF/Senior Airman Matt Donegan)



over Pakistan. In mid-2009, NATO's Airborne Early Warning and Control Force deployed to Turkey to begin flying missions over Afghanistan to co-ordinate air traffic in the country's congested skies. A major part of this is, again, co-ordinating tanker operations.

Enabling operations by airlift, tanker and command and control aircraft has proved vital to the continuing ability of the US and NATO to sustain its military presence in Afghanistan. Without them there would be no Afghan military campaign by the US or NATO.

Chapter 12

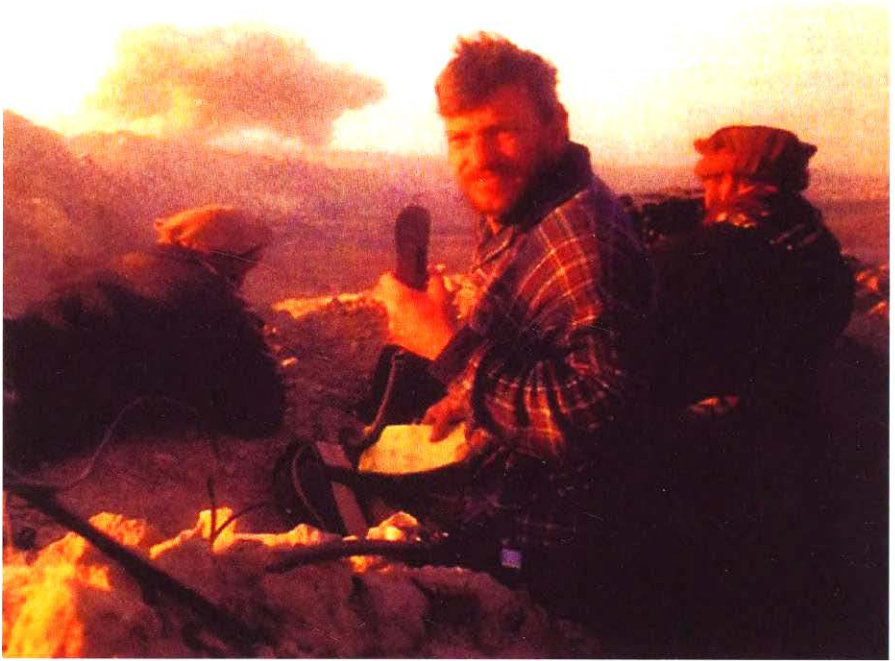
Covert Operations

Afghanistan has long been a venue for the operations of shadowy intelligence agencies, mercenaries, terrorist groups, drug smugglers and other groups owing no loyalty to any government. These 'players' in the Afghan 'great game' often have their own aircraft or even air forces. Few firm details of these organizations have entered the public domain but the information that is available paints an interesting picture.

Among the most mysterious aspects of the fighting in the north of Afghanistan during October and November 2001 are persistent reports that

A Pakistani C-130 photographed during a goodwill visit to the US. The role of aircraft such as these during the alleged evacuation of Pakistani soldiers from Kunduz in November 2001 is one of the big mysteries of the Afghan war. (USAF/Tech. Sgt Maria J. Bare)





US Army Special Forces and CIA paramilitary teams depended on Russian-made Mil Mi-8/17 helicopters during the fighting in northern Afghanistan in late 2001. (US Army)

the US government made a secret deal with the Pakistani President Pervez Musharraf to allow five Pakistani Air Force C-130s and several chartered Antonovs to fly into besieged Konduz to evacuate hundreds of Pakistani military advisors and Inter-Service Intelligence (ISI) agency agents.

Over three nights, local people reported several aircraft landing at Konduz Airport under the noses of US and Northern Alliance troops. US Army special forces troops on the ground are alleged to have asked for US Navy fighters to intercept and shoot down the aircraft but were overruled at the highest level in Washington. Some media reports claimed the nocturnal flights also brought out hundreds of Al Qaeda and Uzbek Islamic fighters. Musharraf reportedly said the flights were essential to keep his pro-Taliban army and intelligence services on side and prevent a coup d'état against his military regime.

At the time Pentagon spokesman, Marine Colonel David Lapan, dismissed the reports as a 'conspiracy theory' but the story did not die and has entered the folklore of the Afghan war.

The actions of the aviation arms of the US intelligence agencies and the private military companies (PMCs) or mercenaries they employ are better documented.

Using civilian aircraft in war zones is not new for the US government, which has a long history of contracting out activities to the private sector. The reasons for this are varied. Defence cutbacks have dramatically reduced the size of the US armed forces, so often the Pentagon does not have the required manpower and equipment to do certain jobs. It is often cheaper to hire PMCs on short-term contracts that recruit regular military personnel. There are sometimes Congressional restrictions placed on where regular US military personnel can be deployed in politically sensitive locations. In some parts of the world, PMCs also offer a low-profile way of projecting American power without attracting too much attention.

CIA Air Force

The most famous example has to be Air America of Vietnam War fame. It was set up by the CIA to help it fight Communist guerrilla forces in South East Asia during the 1960s. Air America's helicopters and transport aircraft

A CIA Mil Mi-17 helicopter drops wounded Afghan soldiers off at the airfield at Bagram Air Base in March 2002, during the heavy fighting linked to Operation Anaconda. The CIA paramilitary crew are clearly visible. (USAF/Master Sgt Keith Reed)





An M18MTV and a Kamov 32 helicopter contracted by the Canadian National Support Element depart from the Kandahar Airfield in order to conduct air re-supply operations in southern Afghanistan. (CMND Master Corporal Angela Abbey)

were at the heart of the 'secret war' in Laos, supplying US-backed insurgent forces for almost a decade. When a war-weary Congress placed restrictions on regular US force numbers and activities in the early 1970s, Air America stepped into the breach airlifting supplies to the besieged Cambodian capital, Phnom Penh, and eventually playing a key role in the evacuation of US personnel from Saigon in the days before the fall of the Vietnamese capital to the Communists. With the American withdrawal from South East Asia in the mid-1970s, the covert warriors of the CIA began to wind down Air America and its assets were eventually sold off for \$20 million in 1976.

The election of US President Ronald Reagan in the 1980s saw the stepping up of the Cold War against the Soviet Union and its allies around the world. Central America was seen as a key theatre of this confrontation and the CIA stepped up its operations against the leftist regime in Nicaragua and anti-government guerrillas in El Salvador. The Reagan administration failed to

persuade a sceptical Congress that US forces should be committed to action in Central America so more low-profile methods were needed. This led to the infamous Iran-Contra scandal, which saw US Colonel Oliver North sell arms to Iran to fund the delivery of arms to right wing Nicaraguan rebels. Southern Air Transport, which had a long history of involvement in CIA covert operations, found itself at the heart of the Iran-Contra scandal when one of its Fairchild C-123 airlifters was shot down over Nicaragua and one of its employees was captured by government forces.

The US response to the Al Qaeda attacks on New York and Washington DC on 11 September 2001 has resulted in a dramatic increase in work for PMCs in Afghanistan, Iraq and elsewhere. As US aircraft began pounding targets in Afghanistan in October 2001, the CIA had already been ramping

The US State Department contracted the private military company, DynCorp, to operate several Bell Huey gunships in southern Afghanistan from 2006 to support drug eradication teams. They operated under the designation Task Force Diablo. (Patrick Allen)





Douglas DC-3 aircraft of the US Department of State's Air Wing operate in Afghanistan to support drug eradication teams. (Patrick Allen)

up its covert air activity. The CIA's Special Activities Division needed aircraft and helicopters to support its drive into Afghanistan. Second-hand Mil Mi-8s were bought through a network of front companies, including one identified as Maverick Aviation, and they were used to fly CIA teams deep into Afghanistan. Apparently, the CIA only had one operational Mi-8 in September 2001 and procurement missions were made to Siberia to buy more involving officials from the US Army's Test and Evaluation Command who had previously bought Russian helicopters for use as aggressor forces on US military exercises areas. Details of the missions emerged when a US government employee and a Maverick Aviation employee faced trial on corruption charges linked to the purchase of the helicopters.

After the fall of the Taliban regime a month later, the CIA established a permanent base in the Afghan capital, Kabul, to co-ordinate covert support for the new pro-US government and continue to hunt for the Al Qaeda chief, Osama bin Laden. To sustain this operation the CIA hired a number of transport aircraft from the civilian sector.

The Pentagon and State Department also hired private aviation support to sustain their forces and help rebuild Afghanistan. The Pentagon hired CASA 212 tactical transport aircraft to support its garrison in the Central Asia country, which achieved notoriety in November 2004 when one of the aircraft crashed after taking off from Bagram Air Base, killing all six

passengers and crew on board. It was owned by Aviation Worldwide Services (AWS) and was operated by Presidential Airways, sister companies that share a large hangar and complex in Melbourne, Florida. The \$34 million sole-source contract was to provide air transport services throughout Afghanistan, Uzbekistan and Pakistan. AWS and Presidential Airways were owned by the same parent company as Blackwater USA, a private security firm that had won large contracts in Afghanistan and Iraq. A further contract worth \$92 million was signed with the Pentagon in 2007 for air transportation in Afghanistan, Kyrgyzstan, Pakistan and Uzbekistan.

Blackwater has since become famous for its role in the US-occupation of Iraq. Its bodyguards protected US personnel of the Coalition Provisional Authority in the aftermath of the fall of Saddam Hussein's regime in April 2003 and have since been employed to provide security to the US and Iraqi governments, as well as several large multinational companies. The company has also provided maintenance personnel to work on CIA General Atomics MQ-1 Predator unmanned aerial vehicles in Pakistan and Afghanistan. In 2009, the company was renamed Xe Services after bad publicity relating to its personnel killing Iraqi civilians in Baghdad.

A CASA-212 aircraft of the Blackwater private military company's subsidiary, Worldwide Aviation Services, carries out an air drop of supplies to US troops in eastern Afghanistan in 2007. (US Army)





During 2009 and 2010, the UK defence company QinetiQ ran a training course for Afghan aviators at its Boscombe Down airfield in Wiltshire, in the UK, using former Bulgarian Mil Mi-17s, under the code name *Project Curium*. (QinetiQ)

Drug Eradication

International efforts to eradicate Afghanistan's poppy crops have at times been spearheaded by the covert warriors of the US PMC industry, backed by US and British special forces. Over the past decade, Afghanistan poppy crops have grown at an alarming rate and in early 2010 were estimated to provide the raw materials for 93 per cent of the world's heroin.

Building up effective law enforcement agencies to tackle this problem has been hampered by the endemic corruption in the Afghan government up to the highest levels. To overcome these problems the US and UK governments set about recruiting, funding, training and equipping a number of special units to spearhead poppy eradication missions. These units were provided with their own Mi-8/17 helicopters to give them mobility and airborne firepower when they ventured out of the major towns and cities on their missions. A small number of UK and US special forces' aviators were attached to these units to fly these helicopters and then train up Afghans to fly alongside them. This mission was considered such a success that it was expanded to encompass the build-up of the new Afghan National Army Air Corps. The UK eventually funded the training of a small contingent of

Afghan Mi-8/17 pilots at Boscombe Down in 2009–10 in the UK, under the title Project Curium.

The US Drug Enforcement and US State Department have funded drug eradication efforts in Afghanistan and employed the PMC Dyncorp to provide security for the Afghan National Police (ANP) eradication teams. To provide cover for these teams in southern Afghanistan during 2006 to 2007 up to a dozen Bell UH-1 Huey gunships flown by US civilians were hired by the company. They were known as Task Force Diablo and the helicopters used the call sign Diablo to identify themselves.

During 2006, they flew from Kandahar Airfield to support eradication operations in Helmand province and the following year were in action in Uruzgan province. They routinely engaged Taliban fighters during these operations and on one mission in July 2007 one of the Hueys was badly damaged.

An Afghan National Army Air Corps Mil Mi-17 helicopter takes off past an Antonov An-26 at the Kabul Air Base, home to the bulk of the country's fledgling air arm. (US Navy/Petty Officer First Class David M. Votroubek)





Afghan National Army Air Corps Mil Mi-35 helicopters take off in a formation practice for the aerial parade in the upcoming Afghan National Day in Kabul. British and USAF Special Operations Forces mentors assigned to US Combined Security Transition Command – Afghanistan have been providing guidance to the ANAAC for several years. (USAF/Tech. Sgt Cecilio M. Ricardo Jr)

Extraordinary Rendition

The CIA's controversial programme to move terrorist suspects around the world to secret prisons or to be handed over to foreign governments for torture has turned a spotlight on the agency's employment of aviation contractors. A global network of aircraft enthusiasts tracked the so-called rendition flights around the world and they passed the information on to politicians and human rights groups in several countries, who in turn published it.

From the data published it appeared that the CIA used a network of more than ten 'shell' companies to manage the leasing of aircraft, pilots and support services from a number of companies, including Aero Contractors, Pegasus Technologies, Tepper Aviation, Richmond Aviation and Aviation Worldwide Services.

The names come as no surprise to long-term observers of the CIA. Aero Contractors has long been suspected of being a direct successor to

Air America. Tepper Aviation has also been suspected of CIA links, after a Hercules registered in the name of this company crashed at Jamba Airfield, in Angola, on 27 November 1989 while carrying a load of weapons for UNITA rebels backed by the agency. The company was also linked to covert arms flights to Bosnia in 1995 by the Dutch official investigation into the Srebrenica massacre. Hercules aircraft owned by Tepper have since been seen operating at the CIA ramp at Kabul International Airport.

Mercenary War?

Forty years on from the glory days of Air America in Laos, freelance aviators are finding they have plenty of work on the front line of the 'global war on terror'. The pay also appears to be good too. Dyncorp was reportedly offering salaries of \$91,000 a year for door gunners of Huey helicopters intended to spray Afghan heroin fields with herbicide.

The downside, of course, is the danger and lack of security. Normal air safety regulations do not apply in many global hot spots and the bad guys have a large array of weaponry. However, the Pentagon has been a good customer over the past decade, allowing PMCs involved in aviation to build a multi-million dollar industry. This work, however, is all on short-term contracts and the uncertain outcome of the 'global war on terror' means the long-term prospects of each contract are far from certain. In the meantime, the PMCs are making the most of the Pentagon, CIA's and State Departments' need for specialist aviation support.

Chapter 13

Technology of the Afghan Air War

Providing air support for friendly troops locked in close combat with enemy troops has always been one of the most demanding skills for military aviators to master. The war in Afghanistan has pushed the requirements for NATO airpower to minimize civilian casualties during such incidents to new heights.

On a daily basis since 2006 in Afghanistan's mountains and deserts, NATO infantry soldiers have used satellite radios with internet-style communications links and remote video-viewing terminals to call in close air support (CAS), using precision-guided weapons that can hit targets with a degree of accuracy measured in a few metres.

Even with this technology and unprecedented levels of training, accidents and mistakes continue to lead a steady drip of civilian casualties and losses to be attributed to so-called 'friendly fire'. This makes CAS one of the most controversial aspects of the NATO campaign in Afghanistan. Senior Alliance military commanders in late 2009 ordered new CAS procedures to be put in place to reduce the 'strategic impact' of air strikes on the Afghan population.

Western air forces have fought four major campaigns since the end of the Cold War in 1989 and CAS has played a major role in each of them. As a result, CAS has consistently remained a high priority for NATO air forces.

The US campaign against the Iraq insurgency from 2003 led to the development of several innovative CAS technologies and tactics and they have since come into mainstream use by US and allied forces in Afghanistan. Under the influence of General David Petraeus, US forces in Iraq from 2007 no longer used CAS as a weapon of first resort to provide force protection for troops under insurgent attack. Live weapons were only used after a process of escalation was followed, starting with low-level passes by jets or attack helicopters, popping flares and strafing with cannons, before bombs or missiles could be employed. The Petraeus counter-insurgency doctrine was based on the concept that the short-term tactical advantages of employing

airpower were often outweighed by the long-term negative impact on the civilian population of casualties and damage to property. Tactical victories could lead to strategic defeat in the battle to win the support of the civilian population during counter-insurgency campaigns, stated Petraeus.

US commanders in Iraq stopped talking about the 'Kill Chain' to describe the application of airpower on the battlefield, but started referring to the 'Effects Chain'. This required a far better understanding or situational awareness of the military, political and cultural situation on the ground. It reinforced even further the role of the FACs or as they were re-named by the US military in 2003, Joint Terminal Attack Controllers (JTACs), in determining when CAS was to be employed.

These efforts have continued in Afghanistan under the NATO-led International Security Assistance Force (ISAF). The ISAF Commander in 2010, General Stanley McChrystal, tightened the ISAF tactical directives on how CAS can be used in situations where civilian casualties are possible

Canadian forward air controllers in action calling in air strikes in the Panjwai district of Kandahar province as part of Operation Medusa in 2006. These teams are instrumental in delivering air support for NATO troops and now have been equipped with revolutionary new technology. (CMND/Sgt Lou Penney)



AIR WAR AFGHANISTAN

and ordered troops to 'scrutinize and limit the use of force such as CAS against residential compounds and other locations likely to produce civilian casualties'. At the heart of these were improvements in the training of ISAF ground personnel and JTACs so they are better able to manage the escalation of force procedures. He identified 14 per cent of civilian deaths and 22 per cent of injuries as occurring in such incidents. 'The use of air-to-ground munitions and indirect fires against residential compounds is only authorized under very limited and prescribed conditions', according to the general's new tactical directive.

In this environment of wars being fought among civilian populations the inventory of weapons carried by CAS aircraft and attack helicopters has had to evolve dramatically. Not only has precision had to be dramatically improved to ensure that weapons go where intended, but their explosive power and effect have had to be changed. While laser-guided weapons were in the forefront of the first move to precision in the 1990s, they suffered

The Combined Air Operations Centre (CAOC) at Al Udeid Air Base in Qatar is the 'nerve centre' for all air activity in Operation Enduring Freedom and choreographs all US and coalition aircraft movements across the Middle East. (USAF/Tech. Sgt Demetrius Lester)





A Sniper targeting-pod mounted on the lower right of a B-1B Lancer fuselage. The fourth-generation pod, such as the Sniper, allows the aircrew to positively identify a target and quickly assess battle damage after an attack. (USAF/Jet Fabara)

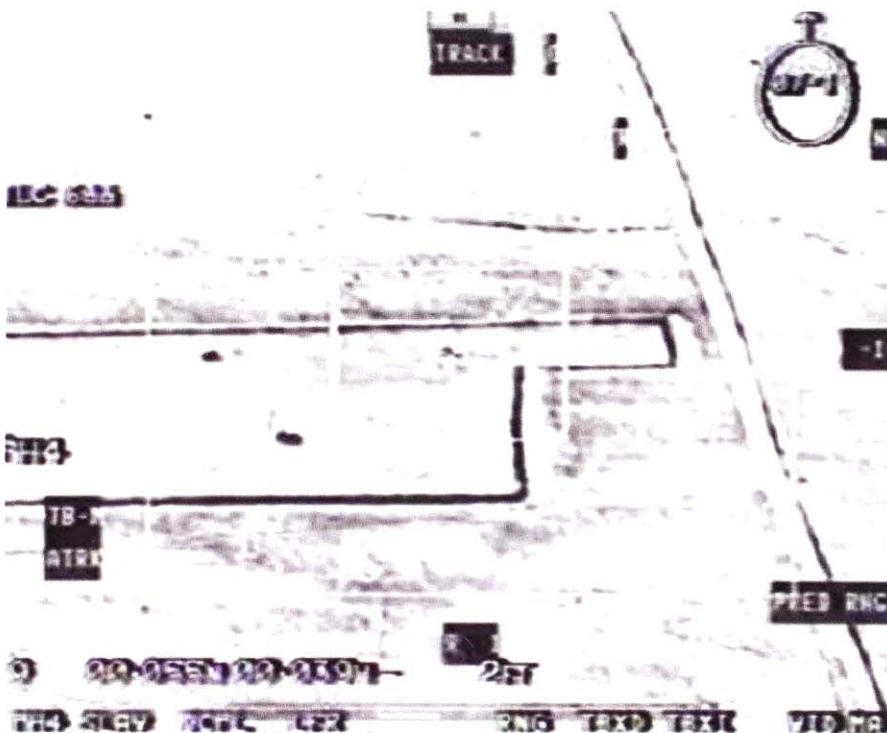
major shortcomings during bad weather. This led to the development of GPS-guided weapons, such as the Boeing Joint Terminal Attack Munition (JDAM) and dual-mode GPS-laser variants of the Raytheon Paveway family of weapons. These had unprecedented degrees of accuracy but experience in Kosovo, Iraq and later in Afghanistan has led to demands from front-line users for smaller warheads so weapons can be used nearer to friendly troops and civilians. The US-led development of the Boeing GBU-39 Small Diameter Bomb (SDB) from 2001 onwards featured a 250-lb warhead, half the size of the previously smallest weapon in the US inventory. 'The GBU-39/B provides the Air Force with the ability to reduce collateral damage, while providing joint terminal attack controllers another option to prosecute targets,' said Lieutenant General Gary L. North, the then US Air Component commander in the Middle East after the first employment of the SDB in

Iraq in 2006. 'This new air-to-ground munition gives our warfighters the explosive power of a conventional bomb without the fragmentation and blast area of other weapons in our inventory.'

Until the arrival of the SDB, US and coalition ground forces in Iraq and Afghanistan were reluctant to call in fixed-wing airpower in scenarios that had a high risk of collateral damage. This led to JTACs giving preference to the use of US Army attack helicopters, armed with cannons or small warhead-equipped Lockheed Martin AGM 114 Hellfire anti-tank missiles, or General Atomics MQ-1 Predator UAVs armed with Hellfire missiles, over fixed-wing jets with bigger weapons.

The target set engaged in Iraq and Afghanistan is also very different from that envisaged in the 1980s or 1990s when many of the weapons currently in NATO air forces' inventories were developed primarily to defeat armoured

So-called first or second generation targeting pods, such as the GEC-Ferranti TIALD, just did not provide imagery of a high enough quality needed to differentiate between civilians and Taliban fighters and were quickly replaced by most air forces operating over Afghanistan. (GEC-Ferranti)





The quality of imagery from four generation pods, such as the Rafael Litening targeting pod, is dramatically better than earlier pods and has transformed air operations over Afghanistan. (Rafael)

vehicles or hardened underground targets. As a result, over the past eight years, there has been considerable interest in developing new warheads that are more suited to the new target set encountered in the 'global war on terror'. This includes mud buildings or sports utility vehicles that do not fully detonate the warheads of High Explosive Anti-Tank (HEAT) missiles or detonate 500-lb high explosive bombs on impact. The UK RAF has been the lead customer for the Raytheon Paveway IV multi-mode guided bomb, which has fuses that can be pre-programmed by the launch aircraft's pilot in the air. This allows weapons to be better matched to the target and is called the 'weapon of choice' by RAF BAE Systems Harrier GR9 and Panavia Tornado GR4 aircrews operating in Afghanistan. The US Army has also fielded so-called thermobaric or enhanced blast warheads on its AGM-114s to allow them to have better effects against the mud compounds found in Afghan villages.

The effectiveness of precision-guided munitions has been dramatically improved over the past eight years by the fielding of third-generation

advanced targeting pods, such as the Rafael Litening 3 or 4, Raytheon Advanced Targeting Forward-looking Infrared (ATFLIR) and Lockheed Martin Sniper. These have significantly enhanced performance over their predecessors – the Ferranti TIALD and Lockheed Martin LANTIRN pods.

A major development since the start of offensive air operations in Afghanistan in October 2001 has been the steady growth of the use of USAF long-range bombers, Boeing B-52H Stratofortresses and Rockwell B-1Bs, for CAS missions. Missions into the interior of Iraq and Afghanistan by fast jets need extensive refuelling from tanker aircraft to reach their area of operation, which poses considerable limitations during CAS missions. This is particularly acute over Afghanistan, where until allied forces occupied the country, there were no air bases for fast jets to operate from. As a result they could spend little more than an hour over Afghanistan without having to break off from the mission to refuel. During CAS missions, it would often take a long time for pilots to orientate themselves with the ground and tactical situation, so having to divert to a tanker at a critical moment in an engagement significantly slowed down the time it took to employ weapons.

The L3 Communications ROVER (Remote Optical Video Enhanced Receiver) equipment can be man-packed by infantry soldiers anywhere on the battlefield and has revolutionized the ability of US and NATO air forces to share reconnaissance imagery with ground units. (Tim Ripley)





Ground troops with ROVER terminals can see the same imagery at the same time as the pilot of the fighter fitted with transmitting-targeting pod or from an orbiting UAV. (Tim Ripley)

The use of B-52Hs and B-1Bs in the tactical role allowed them to avoid this problem and stay over Afghan battlefields for nine or ten hours at a time before having to break off to return to base. Even today, when dozens of NATO fast jets are based within Afghanistan, the size of the country means the big bombers still have a significant endurance advantage and their crews are able to build up a lot more situation awareness during a mission than fast jet pilots. This kind of persistence was previously only available to the US special forces community through its Lockheed AC-130 Spectre gunships.

Even more persistence can be provided by the armed Predator and Reaper UAVs, which have up to eighteen hours' endurance on station. Up to a dozen MQ-1 and 9 orbits were maintained over Afghanistan at anyone time by the USAF and RAF in late 2010 so near-continuous coverage of specific areas of interest could be sustained. In effect, the heavily armed UAVs can be 'parked' over incidents, such as deliberate ground operations or ISAF bases under

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attack, on an almost unlimited basis. The ability of operators in ground control stations to auto-track targets, replay to video imagery and use synthetic aperture radar to 'see into' woods means they can gain an unprecedented understanding of complex battles on the ground. The fact that UAVs can carry their own weapons, means targets can be engaged in a fraction of the time it takes to call up a fast jet or a bomber and the aircrew talked onto the target by a JTAC.

At the heart of US and NATO CAS doctrine since the Second World War is the requirement for both the JTAC and the CAS pilot to confirm they have identified a target. The JTAC has then to specifically clear the pilot to engage the target and release a weapon. Until the turn of the century, this procedure was almost always carried out verbally over radios and could take a long time as both the JTAC and pilot had to 'talk and walk' across the terrain until they were sure they were both looking at the same target. Some JTACs were

The British Army's 32 Regiment Royal Artillery has set up a 'ISTAR Hub' at Camp Bastion to allow intelligence specialists to monitor and analyse the huge quantity of streaming video generated over Helmand province on a daily basis.
(Lt Col Sebastian Heath)





USAF AC-130H Spectre gunships were some of the first US aircraft to be fitted with equipment to down-load imagery to ROVER terminals. (USAF/Senior Airman Julianne Showalter)

equipped with laser target markers and designators to help this procedure, but these items were very bulky and heavy, and not conducive for use by dismounted troops working far from vehicles. The vehicles were needed for mobility and recharging the many batteries required by this equipment.

This situation was transformed by advances in computer technology that allowed JTAC teams to be provided with laptop-sized computer packages that integrated GPS navigation devices, laser-range finders, radios, data-transmission devices and software to generate the four-dimensional co-ordinates needed by GPS-guided weapons. US special forces teams were provided with these 'packages' in time for the US intervention in Afghanistan in 2001 and used them to deadly effect to help forces of the Northern Alliance to drive the Taliban regime from power.

The new generation of CAS technology and tactics were in widespread use with NATO JTAC teams in Afghanistan by 2007 but have been supplemented by remote video terminals (RVTs) or ROVER terminals, which have set in train a revolution in CAS and air-land integration (ALI). Laptop-sized RVTs allow live video imagery to be downloaded from suitably equipped manned aircraft and UAVs. In the case of fast jets it is achieved by fitting commercial-off-the-shelf data links to their advanced targeting pods so the

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JTAC can see exactly what the jet's pilot sees. The same types of data links are also fitted to UAVs so their imagery can also be made available to JTACs. The US company L-3 Communications has dominated this market, selling thousands of its ROVER terminals to US and NATO armed forces, although France's Sagem and Israel's Tadiran Spectralink Communications and Datalinks are now racing to catch up on their US rivals.

RVTs effectively turn fast jets and UAVs into a JTAC's 'eyes in the skies' over Afghan battlefields. JTACs are now becoming expert at using this revolutionary capability to significant tactical effect. Previously, such levels of situational awareness were only available to senior officers in remote command posts. The RVTs also include data transmission capabilities so target data, including so-called 'nine-line' CAS briefs, can be transmitted to pilots by JTACs. They also allow pilots to transmit information about their weapon load and fuel loads to the JTACs as they approach the target area. All these things have dramatically reduced the time it takes to identify and clear targets to be attacked to only a few minutes. Rockwell Collins has incorporated a laser designator, RVT and targeting software into a single man-portable package, dubbed the Firestorm, which is now being supplied to NATO forces in Afghanistan in large numbers.

RAF Wing Commander Harvey Smyth, officer commanding IV Squadron, said this technology has revolutionized the way land forces fight in

The USAF's newest intelligence, surveillance and reconnaissance platform, the MC-12 Liberty, arrived in Afghanistan in December 2009 to augment the Predator and Reaper UAVs to provide live full-motion video feeds to ground forces. (USAF/Senior Airman Tiffany Trojca)





A Canadian Forces Griffon helicopter flies through the jagged Afghan mountains on its way back to Kandahar Airfield, illustrating the highly demanding environment that NATO aircraft and surveillance systems have to operate in. (CMND/Master Corporal Matthew McGregor)

Afghanistan and commented that ISAF units rarely leave their bases without a RVT to receive downloaded video imagery. So integrated into NATO CAS operations in Afghanistan are RVTs that JTACs now rarely call forward fast jets for CAS if the aircraft do not have a video downlink.

In a bid to enhance the time on station of CAS aircraft, the USAF in 2009 began looking at forward-basing strike aircraft on dirt airstrips near the front line. The USAF is proposing to spend \$90 million funding from the 2010 Pentagon budget to launch the Light Attack/Armed Reconnaissance (LA/AR) programme. This looks to field a squadron-sized unit of converted turboprop training aircraft by 2012. This will hark back to days of the Vietnam War when the US military resurrected 1940s era A-1 Skyraider aircraft to fly CAS missions from jungle air strips.

The past twenty years have seen a revolution in CAS. As events unfold in Afghanistan, CAS will clearly remain at the heart of NATO operations so it will require continued investment in training, equipment and new technology.

Chapter 14

America's Surge

By the end of 2008, US, UK and NATO commanders in Afghanistan had become convinced that the war with the Taliban and their tribal allies had reached a stalemate. The insurgents lacked the strength to overrun any International Security Assistance Force (ISAF) forward-operating bases in the south of the country, although they had been able to inflict a steady stream of casualties in mortar and rocket strikes, ambushes and improvised explosive device (IED) attacks. Yet NATO had been unable to expand Afghan government control beyond the main towns and Taliban shadow governors remained in control of most of the countryside. When ISAF patrols left their bases in Kandahar and Helmand provinces, they invariably came under some sort of attack.

The Taliban had also been able to spread their insurgency to regions near the capital Kabul and as far north as Kunduz. This was shaking the morale of the population and President Hamid Karzai's government. With presidential elections due in August 2009, ISAF commanders feared that insurgents would exploit the situation to deliver a fatal blow to the prestige and position of Karzai's regime. With European NATO governments unwilling or unable to significantly increase their troop strength in Afghanistan to shore up the position of ISAF to allow it to take the offensive, it fell to the United States to deploy the additional resources needed.

The decision to make a 'surge' of reinforcements into southern Afghanistan fell to the newly elected President Barack Obama in the weeks after his inauguration in January 2009. A package of some 17,000 troops was ordered to deploy to Helmand and Kandahar provinces in time for the summer campaign season in May and June.

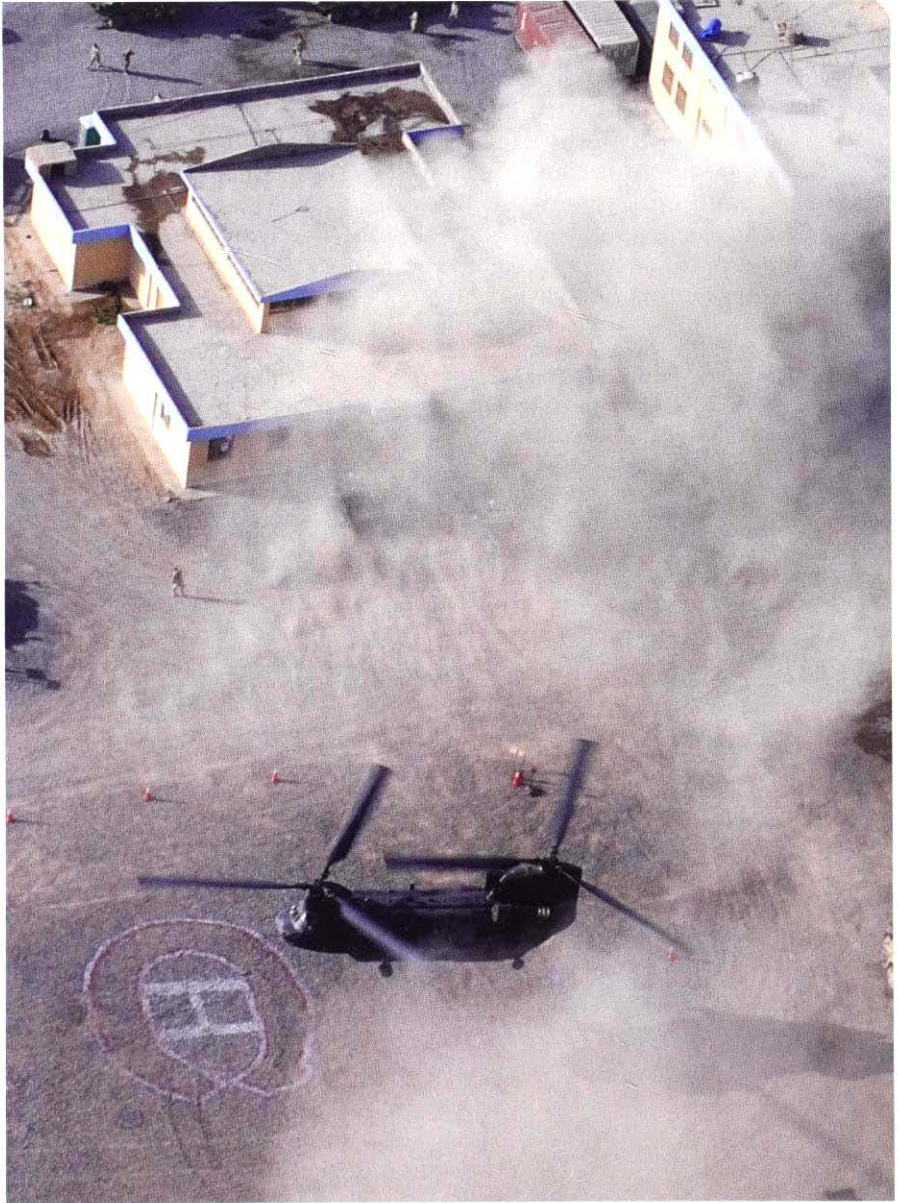
The main combat element consisted of the US Army's 4th Stryker Brigade and the US Marine Corps 2nd Marine Expeditionary Brigade (MEB). These formations deployed predominately by air and major improvements had to be made to Kandahar Airfield (KAF) and Camp Bastion airfield to allow the

hundreds of sorties by Boeing C-17 Globemaster airlifters needed to move the extra troops and their equipment. Hundreds of civilian contractors and US military engineers laid the extra taxiways, unloading ramps and runway extensions needed to prepare for the surge in US military traffic. A US Marine Corps Sikorsky CH-53E Sea Stallion heavy-lift helicopter squadron was forward deployed to Camp Bastion ahead of the main force to assist in the logistic build-up and move advance guard contingents into place.

The US additional reinforcements came with their own integral battlefield helicopters support, in the shape of the US Army's 82nd Airborne Division's Combat Aviation Brigade (CAB) and the USMC's 40th Marine Air Group

An MV-22B Osprey from Marine Medium Tiltrotor Squadron 263 (Reinforced) of the 22nd Marine Expeditionary Unit, takes off from the amphibious assault ship USS *Bataan* (LHD 5) in November 2009 en route to Camp Bastion, Afghanistan, where it was transferred to VMM-261 and used to support the 2nd Marine Expeditionary Brigade. This is the first time the revolutionary tilt-rotor aircraft had been used in Afghanistan. (US Navy/Mass Communication Specialist 2nd Class Kiona Miller)





A Canadian Forces Chinook helicopter lands at Dand District Centre, creating a dust cloud that covers nearby buildings, highlighting the dangers of 'brown out' conditions to helicopters operating in Afghanistan. (CMND/Master Corporal Matthew McGregor)

(MAG). The former brigade boasted full battalions of Boeing AH-64D Apache attack, Boeing CH-47F Chinooks heavy lift and Sikorsky UH-60 Blackhawk utility helicopters, while the MAG had squadrons of Bell AH-1W Super Cobra attack helicopters, and CH-53E and Boeing Vertol CH-46E Sea Knights transport helicopters. The group also included its own squadron of McDonnell Douglas AV-8B Harrier jump jets. Both the US Army and USMC units also included a detachment of tactical and mini UAVs to provide surveillance support.

The USAF also moved to ramp up its support for the enhanced American ground force in the south. An additional squadron of Fairchild A-10A Warthog attack jets was dispatched to KAF and an extra squadron of Lockheed Martin F-16C Fighting Falcons was deployed to Bagram Air Base. To provide combat search and rescue (CSAR) and medical evacuation coverage, a squadron of Sikorsky HH-60H Rescue Hawks was flown to Camp Bastion, where a major US-UK field hospital was being set up.

Thanks to the US airlift effort the new American forces were in place in time to begin the summer's offensives, with the bulk of the fighting falling to the 2nd MEB in Helmand province.

US Army General Stanley McChrystal transformed NATO operations in Afghanistan during 2009 by successfully persuading US President Barack Obama to deploy 30,000 extra troops to allow him to execute his 'population protection' strategy. (ISAF)



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A co-ordinated offensive was planned with UK-led forces to try to seize back large areas of the insurgent-dominated province in time for the presidential election on 28 August to allow a majority of its population to vote.

The British and Danish armies massed nearly 5,000 troops in central Helmand to strike at a section of the province known as the Green Zone. Troops were moved at night by Chinook and Sea Stallion helicopters and armoured vehicles to set up a cordon around the Taliban-infested area. Once they were in place at the start of July, four battalions of British troops and a Danish battlegroup began Operation Panther's Claw to drive out the enemy.

Simultaneously, the 2nd MEB began a series of sweeps through southern Helmand to expand the area of the Afghan government's control around the town of Garmsir and south into the 'Fish Hook' region. Some 4,000 US Marines and 650 Afghan soldiers took part in Operation Khanjar. A series of villages was occupied in a helicopter assaults and then reinforcements arrived in columns of mine-protected vehicles.

As expected, the Taliban put up heavy resistance to these offensives and soon British and US troops were locked in fierce fighting. Taliban fighters

An MV-22B Osprey makes its final approach to Camp Bastion to join the dozens of US Marine Corps CH-53E Sea Stallions, UH-1N/Y Hueys and AH-1W Cobra helicopters operating in southern Afghanistan. (USMC/Cpl. Thomas J. Hermesman)





An RAF Tornado GR4 strike jet, of 12 Squadron, takes off from Kandahar Airfield. The squadron took over the close air support role in the summer of 2009 from 1(F) Squadron, ending the five-year mission of the UK's Joint Force Harrier in Afghanistan. (ISAF)

staged ambushes and planted thousands of IEDs to slow the ISAF advance. Heavy UAV coverage gave US and British commanders a grandstand view of attempts by the Taliban to mass to take on the attacks. These were either engaged directly with missiles from General Atomics MQ-1 Predator and MQ-9 Reaper UAVs or fixed-wing and attack helicopters called in to hit the enemy.

The ISAF claimed hundreds of Taliban killed or injured in the fighting but the enemy managed to inflict scores of casualties. US and British evacuation helicopters were in constant demand to pick up wounded ISAF and Afghan troops.

These two battles were the largest seen in Helmand province to date and the provision of air support was a complex and demanding challenge for NATO airmen. Air space deconfliction of fixed-wing jets, helicopters, land-attack missiles and artillery fire had to be carried out above a constantly changing battlefield.

Elsewhere in southern Afghanistan, the Taliban and ISAF troops fought very localized wars of attrition. The insurgent weapons of choice were the IEDs, which were sewn in huge numbers around all ISAF bases in southern



Air operations over Afghanistan had grown so complex by the summer of 2009 that NATO E-3A Sentry AWACS aircraft were needed to de-conflict aircraft movements. (USAF/Airman 1st Class Makenzie Lang)

Afghanistan. Rockets and mortars were then used to bombard the NATO troops and prompt them to come out of their bases. This made them vulnerable to the IEDs or ambushes.

British troops in the northern Helmand town of Sangin and US troops around Kandahar city bore the brunt of the Taliban IED campaign. The British battalion, garrisoning Sangin, suffered the heaviest casualties of any ISAF unit during the 2009 and found itself under virtual siege for most of the summer. Its only way to strike back against the seemingly 'invisible' Taliban IED teams was through the use of UAVs to 'stake out' likely places where bombs would be planted. If the IEDs teams came into view, the Predators or Reapers would kill them with Hellfire missiles.

The Taliban siege of Sangin was re-enforced by the positioning of heavy machine guns and man-portable surface-to-air missiles or manpads close to the helicopter land zones, which the British garrison depended on for re-supply flights. A chartered Russian Mil Mi-17 and a RAF Chinook were both shot down over the summer of 2009. Only once Operation Panther's Claw was over in early August were the British able to switch significant air surveillance and attack assets to allow a series of deliberate operations to be mounted to open up road routes again to the Sangin garrison.



Mil Mi-26 heavy-lift helicopters were chartered from east European civilian operators by the US and NATO to augment their highly stretched helicopter fleets in southern Afghanistan. (ISAF)

US Army troops operating around Kandahar were involved in a series of operations to establish presences in villages where no NATO troops had previously been present. Air assault operations were used to bypass IED infested roads. In a dramatic show of strength, US Army Chinooks airlifted a battery of M777 155-mm howitzers from KAF down to a newly established base at Spin Baldok on the Pakistani border.

In the east of Afghanistan, the US 82nd Airborne Division found itself having to fight a series of determined battles to hold outposts along the Pakistani border. These small platoon bases dominated key peaks overlooking routes needed by Taliban allies of the Haqqani network to infiltrate Afghanistan and they came under sustained pressure. Helicopters and air drops from Lockheed C-130 Hercules were the main way to ensure these small bases could be re-supplied.

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The major focus for US forces during 2009 was the defence of a series of outposts near Barge-e Matal in Nuristan province. A US brigade combat team deployed most of its troops to hold the area and use helicopters extensively to re-supply and protect a series of outposts on mountain tops around the town. In October, Taliban fighters launched a surprise attack against one of these remote bases, dubbed combat outpost Keating. Some 150 fighters approached undetected, and almost overran the base before AH-64Ds and A-10s arrived and delivered withering fire on the attackers. This turned the tide but eight US soldiers were killed and twenty-two wounded in the attack.

The Taliban had managed to open active insurgency operations around the capital and even northwards towards Kunduz in the summer of 2009. This prompted the German government to alter the rules of engagement of its contingent in ISAF's Regional Command North (RCN) to allow offensive

An upsurge in attacks on French troops deployed to the east of Kabul prompted the first combat deployments of Eurocopter Tiger attack helicopters of the French Army's light aviation branch in the summer of 2009. (ISAF)





By early 2010, Kandahar Airfield was home to some 21,000 NATO personnel and some 5,000 aircraft movements a week. By the end of 2010, plans called for 29,000 personnel to be housed at the base to support the US surge in southern Afghanistan.

operations. In June and July 2009, the German and Afghan armies staged a series of sweeps against suspect Taliban-held villages.

On 4 September, Taliban fighters hijacked two tankers delivering fuel to a NATO base in northern Afghanistan. The tankers were tracked by Predator UAVs to a village near Kunduz and the German commander of RCN requested an air strike to destroy them in case they were in process of being converted into vehicle-borne improvised suicide bombs. A USAF F-15E bombed the tankers but they were surrounded by civilians and dozens were killed. The incident caused a major furore and international journalists travelled north from Kabul to investigate. One British journalist was kidnapped by Taliban fighters near the site of the air strike and held for several days. US UAVs and signals intelligence tracked the kidnappers and British special forces launched a rescue mission. US helicopters of the 160th Special Operations Aviation Regiment delivered the rescue force that successfully extracted the captured journalist.

ISAF air transport and helicopter units were heavily involved in preparations for the Afghanistan presidential elections, delivering voting officials



Joint Operating Base Bastion grew from the camp of the same name built from nothing in the central desert of Helmand province by the British Army in early 2006. In early 2010, it was home to some 14,500 US, UK and coalition troops.

and ballot boxes to hundreds of remote voting sites across the country. This was the precursor for a major nationwide security operation on election day, although ISAF troops stepped back from overt operations in population centres to allow Afghan forces to lead.

Although ISAF forces were able to launch a major offensive during 2009 that secured large population centres from Taliban control in the south, overall senior NATO commanders did not think this was enough to turn the tide against the Taliban. The inclusive and messy election result, which was tainted by claims of President Hamid Karzai's corruption, added to the feeling that Afghanistan was drifting out of control.

The then NATO commander in Afghanistan, US Army General Stanley McChrystal, proposed that a major re-think of strategy was needed to regain the initiative from the Taliban. He proposed that ISAF stop launching offensives, backed with heavy 'kinetic' firepower, which only served to

alienate local people because of the disruption and heavy collateral damage they caused. They were to be replaced by so-called 'population centric' operations that would be aimed at protecting the population from Taliban intimidation and control.

Added impetus for this new strategy would be provided by a new 'surge' of more than 30,000 US and 10,000 NATO additional troops. McChrystal wanted them so he could secure Afghanistan's major population centres and reduce the influence of the Taliban's shadow government.

After months of agonizing, President Obama gave the go-ahead in November 2009 and almost immediately the flow of reinforcements to Afghanistan began.

The first major test of McChrystal's strategy came in February 2010 when Regional Command South began a series of operations across Helmand and Kandahar provinces, dubbed Operation Moshtarak.

The first phase was aimed at seizing control of a swath of villages and towns in Helmand's Green Zone. Some 4,000 British troops occupied an area around Nadi-e-Ali, including the Taliban 'shadow' capital of Helmand. Meanwhile, the 2nd MEB struck at the town of Marjah.

Most of the assault troops were deployed by helicopter and UAVs flew over watch missions to provide commanders with information about Taliban reactions. Although NATO strike aircraft and attack helicopters were in the air ready to intervene, General McChrystal instituted tough new rules of engagement and the assault troops were very constrained as to when they could employ heavy firepower. During the course of Operation Mushtarak, there were no fixed-wing air strikes and only a handful of attack helicopter or UAV missile strikes in the objective area. The first three months of 2010 saw NATO aircraft fly some 9,000 close air support sorties, more than 6,000 surveillance missions, 17,000 airlift sorties, 4,000 air refuelling sorties and 1,000 rescue missions. However, the number of munitions dropped was down to 468 compared with 658 in the same period in the previous year. This followed on from the trend set in 2009, with the number of munitions dropping by nearly 20 per cent to 4,184 compared with 5,051 in 2008, yet the sortie rate surged to 26,474 during the 2009. This reduction in air attacks seems to have had an impact on civilian casualties, with the UN Assistance Mission in Afghanistan putting the civilian death toll in 2009 as 359 compared with 680 in the previous year.

General McChrystal then moved the attention of his offensive to Kandahar and put in train plans to concentrate his force around the city during the summer of 2010.

Chapter 15

Secret Drone War Over Pakistan

When news emerged in August 2009 that the commander of the Pakistan Taliban, Baitullah Mehsud, had been killed by missiles fired from a United States UAV or drone, the CIA's controversial secret campaign using UAVs against the Islamic jihadist groups appeared vindicated.

Since 2001, the Pakistan's lawless border region with Afghanistan has been on the front line in the US-led campaign against Islamic jihadists, the most infamous of these being the Al Qaeda network led by Osama bin Laden who has been on the run in the mountainous region that straddles the Afghan-Pakistan frontier since he was driven from Afghanistan by US-led forces.

During 2008 and 2009 on a weekly basis, the international news agency reported air strikes in the frontier provinces by US missile-armed UAVs. Shadowy US-government sources then describe the targets as 'senior Al Qaeda and Taliban leaders' and claimed that the strikes were inching closer to bin Laden himself. At first when news of these attacks emerged, the Pakistani government would usually disown them. They claimed the strikes were an infringement of its sovereignty, which just stoked support for jihadist groups, including the increasingly powerful Pakistani Taliban.

The unreality of this ritual was exposed in February 2009, when a Pakistani newspaper published satellite imagery downloaded from the Google Earth website of a UAV base inside Pakistan. The unmistakable shape of three General Atomics MQ-1 Predator UAVs could be seen in one of the images and the rest of the air base clearly showed US-style pre-fabricated hangars and security installations. The newspaper published the story days after US Senator Dianne Feinstein revealed the existence of the base and then a British newspaper published details of the Pentagon contracts for the delivery of large quantities of aviation fuel to it. The cat was well and truly out the bag, despite the denials of the Pakistani government that American UAVs were flying from its territory. CIA UAV operations have always been cloaked in



An MQ-9 Reaper UAV prepares to land after a mission in southern Afghanistan. The precision-guided bomb and air-to-ground missile-armed Reaper is now the mainstay of US UAV strike operations in Afghanistan and Pakistan. (USAF/Staff Sgt Brian Ferguson)

secrecy, with a spokeswoman saying that it would not comment on UAV operations in Pakistan. When asked if the agency actually owned any UAVs, she replied that she could 'not comment'.

For those with a long memory, the idea of a covert US spy plane base in Pakistan was not completely outlandish. Back in the 1950s and 1960s, Pakistan had been a close US ally in the Cold War and had allowed Lockheed U-2 spy planes to launch from Peshawar Air Base for flights over the Soviet Union. This culminated in May 1960 with the shooting down over the Soviet Union of a CIA U-2, piloted by Gary Powers, that took off from Peshawar. The situation in the first decade of the twenty-first century was very different and more complex.

The CIA has had a long interest in UAVs as a means of collecting intelligence and as early as 1994, it purchased a GNAT-750 system for use over Bosnia at the height of the Balkan conflicts. This led to the establishment of a close relationship between 'the Agency' and General Atomics, the

manufacturer of the majority of the Pentagon's UAVs. As a matter of routine General Atomics refuses to answer questions about the purchase of its products by the CIA. For the remainder of the 1990s, the USAF expanded its UAV operations, using the Predator air vehicle over Bosnia and Kosovo. The CIA watched the USAF's growing experience with the Predator closely and was particularly impressed when it fired a Lockheed Martin AGM-114 Hellfire missile from the UAV in February 2001.

The CIA had been building a close relationship with the Pentagon to migrate UAV experience to its covert operations organization, known as its Special Activities Division. Al Qaeda attacks on US Embassies in East Africa in 1998 had led the CIA to ramp up its efforts to try to locate the Al Qaeda organization's bases in Afghanistan.

In 2000, a joint CIA-Pentagon effort was agreed to locate Osama bin Laden in Afghanistan. Dubbed 'Afghan Eyes', it involved a projected sixty-day trial run of Predators over the central Asian country. The first experimental flight was launched from a forward base in Uzbekistan on 7 September 2000. Ten

The USAF fired the first Hellfire missiles from RQ-1 Predator UAVs only a few months before the start of the war in Afghanistan in September 2001. (USAF)





The Taliban claimed to have shot down this Predator in September in 2001 ahead of the first overt US air strikes inside Afghanistan.

out of the ensuing fifteen Predator missions over Afghanistan were rated successful. On at least two flights, a Predator spotted a tall man in white robes at bin Laden's Tarnak Farm compound outside Kandahar; the figure was subsequently deemed to be 'probably bin Laden'.

Video imagery from the UAVs was relayed to a flight operations room in the CIA's headquarters in Langley, Virginia. But by mid-October 2000, deteriorating weather conditions made it difficult for the Predator to fly from its base in Uzbekistan, and the mission was suspended.

The CIA spent most of the winter and spring of 2001 trying to work out how to continue its campaign against Al Qaeda. It was decided to arm its Predators to enable an attempt to be made to kill bin Laden if he could be located. It took until 4 September 2001 for the CIA and White House to approve the new mission. The Uzbek government, however, had yet to approve the launching of strike missions from its territory.

A few days later, the world changed. Al Qaeda attacks on New York and Washington DC left nearly 3,000 people dead. The gloves came off and within days the CIA's armed Predators were heading back to Uzbekistan. The first mission was flown over Kabul and Kandahar on 18 September by unarmed Predators. Subsequent host nation approval was granted on 7 October and the first armed mission was flown on the same day.

At the same time as CIA UAVs were operating across Afghanistan's northern border, the USAF moved to set up its own UAV operation at Jacobabad Air Base in Pakistan in October 2001. This was the main hub of US



USAF personnel from the 11th Expeditionary Reconnaissance Squadron push a RQ-1B Predator into a holding spot at a Jacobabad Air Base in Pakistan in July 2002 before launching for a Operation Enduring Freedom mission. (USAF/Staff Sgt William Greer)

special operations forces operations aimed at southern Afghanistan during Operation Enduring Freedom. Once US forces had become established in Afghanistan in early 2002 and into 2003, the Uzbekistan and Jacobabad Predator detachments started to wind down and Bagram Air Base, north-east of Kabul and Kandahar in the south, eventually became the hubs of US military UAV operations.

The escape of bin Laden and his associates into Pakistan was a continuing source of concern to the US government and it tasked the CIA and US special operations forces' strike teams to find and kill him. The need to do something about what was becoming known as the 'Al Qaeda sanctuary' in Pakistan's North West Frontier Province and the Federally Administered Tribal Area rose up the agenda.

The Pakistani government had never really had a firm grip on the border provinces and the region's tribes were notoriously suspicious of outsiders and foreigners. It was not the place CIA 'human assets' could easily penetrate and the region's bad weather also blocked reconnaissance satellite coverage for many months of the year. The Predator was therefore seen as an ideal intelligence-gathering system to penetrate this dangerous region and strike rapidly at any targets it discovered.

The Pakistani military dictator, General Pervez Musharraf, reportedly agreed to the US strategy, as long as his involvement was kept secret from the country's public for fear it would spark a backlash against his increasingly unpopular rule. When questioned about the Pakistani mission, senior US and British military officers involved in UAV operations in Afghanistan in 2009 all denied any involvement by their units. This form of words has been used in the past during US covert operations and was the best evidence that the CIA were running the operation until the Google Earth images emerged.

Until late 2004, Afghanistan-based UAVs took on the burden of the Pakistan mission but the CIA reportedly then moved to set up a Predator base inside Pakistan. This was needed because of the UAVs' slow speed, only 113 knots, and relative short range when armed with two Hellfire missiles. By having a launch and recovery base inside Pakistan, the CIA would be able to react quickly to emerging targets and keep its Predator in the air for as long as possible, saving several hours of flight time if they operated from a base outside Pakistan. Crucially, UAVs based in Pakistan did not have to fly over the high mountain range straddling the Afghan-Pakistan border, which severely hampered Predator flight operations in bad

Launch and recovery element members of the 11th Reconnaissance Squadron perform pre-flight checks on the Predator at Jacobabad Air Base in Pakistan prior to a mission in November 2001. (USAF/Tech. Sgt Scott Reed)





An RQ-1 Predator from the 11th Reconnaissance Squadron leaves the hardened aircraft shelter area occupied by the UAV launch and recovery element at Jacobabad Air Base in Pakistan between 2001 and 2004. (USAF/Tech. Sgt Scott Reed)

winter weather. The CIA was given this task because of the sensitivity of the mission and it would allow General Musharraf to honestly say he had not allowed US troops to operate inside Pakistan.

The site chosen for the base was at Bandari, which was originally a Pakistani military air strip. It is referred to by American military sources as Shamsi. The strip (located at 27 degrees, 51 minutes North, 65 degrees, 10 minutes East) has a 2,800-metre long runway and is close to the town of Wadh in Kharan district, which straddles the Sindh-Balochistan border. The Google Earth imagery taken in 2006 shows the site and newer imagery shows it still in use in 2009. This later imagery clearly shows three US-style clam-shell pre-fabricated hangars. The launch site is surrounded by field defences and there also appeared to be a heavily defended compound at the other end of the runway. Media reports from Pakistan suggest that a large number of Pakistani Army troops protect the outer perimeter of the base to keep civilians and insurgents far away.

The *modus operandi* for the Pakistan UAV base is likely to have followed established USAF Predator deployment doctrine. Its forward-deployed units are termed 'launch and recovery elements' or LREs. These usually comprise around twenty personnel and include two aircrew (pilot and



The Af-Pak theatre of operations. (CIA)

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sensor operator). Their job is to take off and land the UAV, via a line of sight datalink to a ground control station at the base. They then hand over to aircrew in a remote ground control station to direct the next phase of the mission. The forward-deployed CIA personnel are likely to have military UAV backgrounds or have worked previously for General Atomics and other contractors involved in UAV support to the USAF. The length of time the base has been in operations, suggests the crews are regularly rotated for rest and recuperation outside Pakistan. The Agency has a fleet of aircraft and helicopters with civilian 'cover stories' to hide their identities based in a friendly neighbouring country. They could easily fly to Pakistan without attracting too much attention.

The combat segment of US Predator missions, including CIA flights, is usually conducted remotely, over a satellite datalink, from a ground control station outside the theatre of operations. The aircrew in the remote ground control station monitor the air vehicle's sensors and are also able to

Shamsi Air Base in Pakistan pictured by the Google Earth observation satellite in 2010, showing the infra-structure of a US Predator base. (Googleearth.com)



receive real-time intelligence updates from reconnaissance satellites, signals intelligence sources and operatives on the ground. Given political sensitivity of the the mission in Pakistan, it is very likely that the imagery is beamed into the CIA station in the US Embassy in the Pakistani capital, Islamabad, as well as to CIA headquarters at Langley. At these locations very high-ranking CIA officials would give the go-ahead for weapons to be fired at targets within Pakistani territory.

The UAV attacks first came to the attention of the international media on 18 June 2004 when five people, including Pakistani Taliban chief Nek Mohammad, were killed in a Predator strike near Wana. Local media reports that the insurgent chief was speaking on a satellite telephone minutes before the attack would suggest the CIA were using signals intelligence systems and voice recognition software to pin-point the location of their target. Attacks took place at a steady rate with two to three attacks taking place a year until the end of 2007.

As the war in Afghanistan intensified in 2008 and fighting spread across the Pakistani border, the CIA stepped up its UAV operations with details of some twenty-eight missile strikes emerging in the media. This included a strike in November that allegedly killed British Al Qaeda operative Rashid

Three Predator UAVs are clearly visible at Shamsi Air Base in Pakistan in a Google Earth image dating from 2006. (Googleearth.com)



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Rauf. A number of attacks included reports of multiple missile engagements, suggesting that the CIA had brought into service the General Atomics MQ-9 Reaper, which can carry up to fourteen Hellfire missiles.

This tempo of operations increased in 2009. After the inauguration of US President Barack Obama, the attacks continued, indicating that the new administration in Washington was going to continue striking at Al Qaeda targets in Pakistan, with fifty-five attacks being launched by the end of the year compared with thirty-six in 2008.

US intelligence officials claimed in March 2009 that the Predator strikes had killed nine of Al Qaeda's twenty top commanders, telling western media in Pakistan that many top Taliban and Al Qaeda leaders had fled to the city of Quetta, or even further afield to the port of Karachi, to find sanctuary from the Predator strikes. US officials claimed that Al Qaeda is being slowly but systematically destroyed because of the UAV attacks. They said the attacks sowed the seeds of uncertainty and discord among the ranks of the jihadist

The Pakistani capital, Islamabad, as seen from a US spy satellite. US intelligence agencies have kept Pakistan under intense surveillance since September 2001. (US National Geospatial-Intelligence Agency)





Pakistani Air Force F-7 fighter bombers have been in the forefront of the campaign against the country's Taliban insurgents in 2009. (USAF/Staff Sgt Michael B. Keller)

group, with many believing that traitors in their ranks are revealing the locations of their secret bases to US intelligence. This has led them to turn against each other.

Pakistan repeatedly protested about these attacks, claiming that they were an infringement of its sovereignty. Allegations that several hundreds of women and children were killed generated much negative media coverage in Pakistan. This prompted the Pakistani government to ramp up its rhetoric against the UAV strikes. The revelation earlier in 2009 that the US had a UAV base inside Pakistan placed the Islamabad government in a very difficult position and the country's foreign minister, Shah Mehmood Qureshi, had to publicly deny that any Pakistani bases were used for US UAV attacks.

This all changed in April 2009, when Pakistani Taliban fighters surged into the Buner District, less than a 100 miles from the country's capital. This galvanized the Pakistani government to launch a major air and ground offensive to drive the Taliban out of Buner and neighbouring Swat Valley. In what appeared to be a co-ordinated move against the Pakistani Taliban, the US ramped up its UAV operations to keep up the pressure on jihadist groups in the border region. Strike operations were now taking place on a weekly basis. In early July, four strikes took place in a five-day period alone.

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Baitullah Mehsud, supreme commander of the Tehrik-e-Taleban Pakistan group (Movement of Taleban in Pakistan), who was suspected of ordering the assassination of Pakistani prime minister Benazir Bhutto in December 2007, was reportedly the target of the UAV strikes. He survived Predator strikes in 2008 and early 2009, only for his luck to run out on 5 August 2009.

Crucially, the attitude of the Pakistani government and public opinion appeared to change dramatically and the UAV strikes had suddenly become popular. The Pakistanis reportedly even asked the US if Pakistan could begin directing the attacks. The US and Pakistan now seemed to have a common enemy. The ramping up of co-operation between the US and Pakistan grew during 2009, when it emerged that the CIA had opened a second UAV base in the country, with the Pakistan Air Force's Mushaf Air Base at Sargodh in the northern Punjab. This significantly reduced the flight time of US UAVs over the war zone with the Pakistan Taliban.

The conflict between the CIA and Al Qaeda took an unexpected turn on 30 December 2009, when the agency's base at Khost, just across the border from the North West Frontier Province in eastern Afghanistan, was attacked by a suicide bomber. The attacker was a Jordanian double agent who had originally been recruited to infiltrate Al Qaeda bases in Pakistan to find targets for the CIA's UAVs. He was subsequently 'turned' and went back to Forward Operating Base Chapman at Khost to meet his CIA liaison team and detonated a large bomb, killing seven US agents, including the station chief at the base. Soon after this incident, it emerged that the US private military company, Blackwater, had been contracted by the CIA to run a Predator launch and recovery element at Khost, indicating the location had also been used to support the UAV campaign against Pakistani targets.

Night-time operations by US MQ-9 Reapers were a daily occurrence in the 'Pashtun belt' astride the Afghanistan-Pakistan border region during 2009-2010. (USAF/Tech. Sgt Erik Gudmundson)



The CIA operation in Pakistan has been criticized extensively, with some accounts claiming more than 700 civilians have been killed in UAV strike missions. US intelligence sources have claimed the strikes have killed hundreds of Taliban and Al Qaeda fighters and commanders, seriously undermining the capabilities of jihadist groups in the region. The rival claims are difficult to verify because of the nature of the conflicts along the border of Pakistan and Afghanistan. With the Pakistani Army locked in a bitter war with jihadist groups in the border regions from 2009 onwards, it seemed likely that the CIA would continue its UAV operations in the country for the foreseeable future to help its allies. The CIA's UAV force seemed to have become the long-range interdiction force of the Pakistani Army.

One aspect of the CIA UAV operation in Pakistan was the absence, up to early 2010, of any strikes against the Afghan Taliban 'sanctuary' in the border region around the city of Quetta. Conspiracy theories abound about this, but it all adds to the air of mystery surrounding the most controversial UAV operation in the world.

Chapter 16

Air Power Assessed

After almost a decade of international military involvement in Afghanistan, the role of air power is highly controversial.

Critics have claimed that air power alone cannot win the war and reliance on aerial bombing alienates the local population, because of the inevitable civilian casualties that are caused when bombs go accidentally astray. The use of unmanned aerial vehicles (UAVs) controlled remotely from Nevada adds to the image that air power can never win the war because it is disconnected from the key objective of winning the 'hearts and minds' of the Afghan population. The CIA's UAV campaign in Pakistan has also been criticized for similar reasons, because of the claims it is causing heavy civilian casualties.

The hi-tech combat aircraft used by NATO and the US air forces are also seen as overly complex and expensive 'Cold War relics' that are not relevant to modern warfare. The high cost of the war, at some \$65 billion for the US and \$6 billion for the UK in 2010 alone, also fuels criticism that reliance on air power is not cost effective.

With the war in Afghanistan still raging, it is perhaps premature to rush into judgement on the role played by air power. Some initial assessments are possible. Undoubtedly, US air power was instrumental in the defeat of the Taliban regime in 2001. Every aspect of the US campaign relied on aircraft and helicopters, and American commanders showed flair and imagination in using their air resources to best effect. The early use of UAVs to find and track targets in real-time was a great innovation in air warfare.

The introduction of US aircraft, equipped with precision-guided weapons, was a real game changer on Afghan battlefields. The head of the RAF between 2006 and 2009, Air Chief Marshal Sir Glenn Torpy, said that, historically, the Afghan fighters have respected fixed-wing air power.

The experience of the Russians in the 1980s and Americans in 2001 is that air power has a psychological impact, both on the enemy and

pro-government Afghan forces. Afghan National Army units are more inclined to advance during combat situations when coalition aircraft are overhead.

Subsequent US and NATO operations in Afghanistan have seen extensive use of aircraft and helicopters in almost every role, including strategic air lift, reconnaissance and surveillance, close air support, medical evacuation and the movement of troops by helicopter. 'Air power is a non-discretionary part of operations [in Afghanistan],' said Air Vice-Marshal Timo Anderson, the Assistant Chief of the UK Air Staff between 2007 and 2010, who claimed the role of air power in the current conflict in Afghanistan is often misrepresented by media critics. Anderson described the NATO counter-insurgency (COIN) campaign in the Central Asian country as 'unequivocally a partnership of air and land forces. Both need each other to some degree. You can't do COIN from 30,000 feet but nothing moves on the ground without air support.'

He pointed to the re-supply of troops by air, and the use of air surveillance to allow small numbers of troops to dominate large areas of ground. 'Foot

USAF heavy bombers such as this B-1B Lancer have played an instrumental part in the Afghan campaign flying tactical air support for US and coalition ground troops. (USAF/Staff Sgt Aaron Allmon)



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patrols only go out of bases [in Afghanistan] with an intelligence picture that is generated in large part by air reconnaissance,' he said. 'When things get hot all patrols have access to airborne capabilities. [Air] is their get out of jail card to extract troops from contact situations.'

During the summer of 2006, NATO and US air power again proved decisive in protecting isolated bases in southern Afghanistan from Taliban attack. Without hourly air strikes around the Platoon Houses in Helmand province, British bases would undoubtedly have been overrun, with hundreds of soldiers being killed and NATO would have been pushed out of southern Afghanistan.

Since then, the inability of international forces to defeat or turn around the growth in the insurgency has shaken faith in the military strategy of NATO. Critics have said that apparently unrestrained use of air strikes has led to unnecessary civilian casualties that only served to undermine support for the Kabul government and NATO forces among the Afghan public.

US Marine Corps AH-1W Cobra attack helicopters have won plaudits from front-line troops because of their ability to bring firepower rapidly to bear on small groups of Taliban fighters. (USMC)





A US Army Chinook helicopter creates a crowd of dust when landing at Patrol Base Wilson near Kandahar, demonstrating the dangers for helicopter pilots flying in Afghanistan. (CMND/MCpl Yves Gemus)

The International Security Assistance Force (ISAF) commander from 2009, General Stanley McChrystal, took much of this criticism on board when he crafted his new strategy centred on protecting the Afghan population. New rules of engagement were introduced that tightened up the conditions when NATO troops could call down air strikes to avoid civilian casualties. Alliance airmen rejected that this was a criticism of air power because they said that the new strategy was being introduced against a background of the US surging 30,000 extra troops into Afghanistan so there would be greater NATO troop density and hence fewer outnumbered and isolated outposts that needed to rely on air support as their main means of protection.

Anderson said:

What [General McChrystal] really means when he talks about reducing the role of air power is stopping the kinetic effect campaign. He was not denigrating the air contribution – without it there is no campaign. Air power is a force multiplier and good bang for a buck. Air power provides synergy and is mutually beneficial.

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If you take out fighter aircraft and try to do the same thing with manpower, it would dwarf what the technology costs.

Anderson was supported by US Army General Karl Eikenberry, the commander of US forces in Afghanistan, who commented in 2007 that:

... without air and space power, 500 to 600,000 troops would be needed in Afghanistan to achieve the same effects as the 40,000 soldiers, sailors and airmen we have there today. Air and space power provides the asymmetric advantage over the Taliban such that no matter where they choose to fight, coalition forces can bring to bear overwhelming firepower in a matter of minutes. Moreover, putting 500 to 600,000 troops into the country may achieve the same military effect, but it could have a negative impact on the population; such numbers could appear as an occupying force, rather than a security assistance force. In short, there is no substitute for effective air and space power.

US and coalition troops manning isolated patrol bases rely on USAF C-17 Globemaster IIIs to airdrop cargo pallets of supplies, thus reducing the need for truck convoys to travel along IED-infested roads. (US Army/Spc. Micah E. Clare)





Afghan National Army Air Corp Airmen pilot two Mi-35 helicopters during a training sortie over southern Afghanistan in October 2009. (USAF/Staff Sgt Angelita Lawrence)

Many critics of the use of air power in Afghanistan concentrate on the apparent 'risk-free' aspects of using high-level bombing from jet fighters or UAVs. The implication is that only close-quarter ground combat is 'worthy', 'honourable' and shows 'real bravery'.

Even a cursory examination of the casualty figures and bravery awards from many NATO armed forces from service in Afghanistan since 2001 clearly reveals that Alliance airmen and women have also paid a price in blood during the campaign against the Taliban, just like their army comrades. The Afghan terrain and climate make flying in the country inherently challenging and dangerous. This is particularly the case for helicopter crews who have to fly at low level and often have to face unrelenting enemy fire.

Some 213 US and NATO personnel have died in air crashes or shoot-downs as a result of enemy fire from October 2001 to March 2010, out of 1,617 total international military deaths. This represents some 13 per cent of all casualties.



Afghanistan's Soviet-era air force was easily taken down by US air power in October 2001. (USAF)

US Navy F/A-18 Super Hornets deploy flares during a combat patrol over Afghanistan to counter Taliban man-portable air-to-surface missiles, which were the main threat to fixed-wing coalition aircraft. (USAF/Staff Sgt Aaron Allmon)





A ramp ceremony held at Kandahar Airfield allows comrades to pay their respects to Corporal Christopher Jonathan Reid, Corporal Bryce Jeffrey Keller, Private Kevin Dallaire, and Sergeant Vaughan Ingram of 1 Princess Patricia's Canadian Light Infantry in August 2006, before their remains are flown out of Afghanistan on a Canadian Forces CC-130 Hercules. (CMND/Master Corporal Lester Budden)

One final duty of US and NATO airmen and women is the repatriation with dignity of the bodies of fallen comrades from Afghanistan to their home countries. Week after week, this solemn work is undertaken by aircrews from all Alliance countries and it is a reminder to their populations that the war in Afghanistan has a price.

Appendix 1

US and NATO Manned Fixed Wing and Helicopter Air Losses in Afghanistan, October 2001 to April 2010

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
2001									
19/10/2001	MH-47E		160th SOAR, US Army	nr Kandahar	hit building on take-off	undercarriage damage, flew off			
19/10/2001	MH-60K		1-160 SOAR, US Army	nr Dalbandin air base, Pakistan	brown-out	written off	2	3	crew rescued by CH-53 of 15th MEU
02/11/2001	MH-53J	69-5791	20th SOS/16th SOW, USAF	central Afghanistan	bad weather	destroyed by US air strike		4	C/s Razor 03
20/11/2001	MH-6J	81-23653	A-1-160th SOAR, US Army	southern Afghanistan		recovered		4	crew rescued by C-130
06/12/2001	UH-1N	160440	HMM-365/HMLA-269, USMC	nr FOB Rhino, Dolangi	brown-out			2	
12/12/2001	B-1B	86-0114 EL	28th AEW, USAF	100 nm from Diego Garcia	engine problem				4 crew rescued by USS Russell
29/12/2001	CH-53E	YM-25	HMM-365, USAF	near Kandahar	hit hill			4	
2002									
mid Jan 02	F/A-18C	163767	VFA-147, USN	over Afghanistan	AAR problem	divert to Jacobabad, Pakistan			aircraft repair and return to carrier

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
09/01/2002	KC-130R	160021	QB-021	VMGR-352, USMC	Shamsi airfield, Pakistan	hit ridge	7		
20/01/2002	CH-53E	163082		HMH-361/15th MEU, USMC	Bagram AB	technical fault	2	5	destroyed by US air strike
28/01/2002	CH-47D	84-24165		B-2-159th Avn Regt, US Army	nr Khost	AAA		16	
13/02/2002	MC-130P	66-0213		9th SOS/16th SOW, USAF	eastern Afghanistan	hit hill at night		8	all crew rescued by US helo
04/03/2002	MH-47E	92-0476		160th SOAR, US Army	Shah-J Kot, Op Anaconda	AAA			SEAL killed by Taliban, later recovered by Mi-26
04/03/2002	MH-47E	92-0475		160th SOAR, US Army	Shah-J Kot, Op Anaconda	AAA + RPG	6	11	SEAL killed by Taliban
08/03/2002	F-14A			VF-211, USN	north Arabian Sea	failed landing			crew rescued by HH-60
18/03/02	MH-53J	68-8286		20th SOS, USAF	Tarin Kowt	hard landing			crew OK
10/04/2002	AH-64A	89-0209		3-101st Avn Regt, US Army	north-east Kandahar	technical fault		2	
12/06/2002	MC-130H	84-0475		15th SOS/16th SOW, USAF	Bande Sardeh Dam, nr Gardez	poor load packing	3	7	
28/07/2002	UH-60L	93-26528		4-101st Avn Regt, US Army	on taxiway at Bagram AB	class B damage			
13/08/2002	HH-60G	97-26779	MY	41st ERQS, USAF	Orgun-e SF base	brown-out		6	recovered for repair
14/08/2002	AH-64A	88-0261		1-229th Avn Regt, US Army	32 km south Kabul	technical problem		2	written off
06/10/2002	CH-47D	86-1669		7-101st Avn Regt, US Army	Deh Rawoot	damage undercarriage			fly away
01/11/2002	CH-47D			US Army		air-to-air collision with another CH-47D			written off
18/12/2002	F-16AM	686		331 Skv, RNOAF	Ganci AB, Manas, Krygyzstan	undercarriage collapse			
19/12/2002	F-16AM	E-006		726 ESK, RDAF	Bagram AB	overran runway			recovered by Chinook
21/12/2002	CH-53GS	84+09		German Army, HFR 25	near Kabul	rotor/engine problem		7	

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
2003									
13/01/2003	CH-47D	84-24175	4-159th Avn Regt, US Army	minefield near Bagram	undercarriage + F6 damage	fly away			
30/01/2003	MH-60L	89-26185	D-1-160th SOAR, US Army	11 km east Bagram		written off	4		
23/03/2003	HH-60G	Komodo 11	41st ERQS, USAF	29 km north Chanzi	weather		6		
23/04/2003	CH-47D	90-0217	US Army	near Spin Boldak during CTF-82 op	destroyed on site				
03/06/2003	AH-64	89-2052	B-1-229th Avn Regt, US Army	near Orgun-e		destroyed on site			
19/06/2003	u/I aircraft		UN	made u/c up landing		heavy damage			
23/11/2003	MH-53J		20th SOS/16th SOW, USAF	11 km east Bagram	engine failure	written off	5		
2004									
22/02/2004	AB212		Pacific Helicopters (Australia)	65 km south-west Kandahar	enemy fire	written off	1		
26/04/2004	CH-46E	153389	HMM-266, USMC	??					
28/06/2004	AH-64A	89-0263	1-221th Avn/Utah ANG, USAF	north Qalat	accident	written off		2	
12/08/2004	UH-60L	96-26699	B-2-25th Avn Regt, US Army	Gurduz, near Khost	technical problem		1	12	
29/08/2004	AH-64D	Q-20	301 Sqn, RNLAf	12 km north Kabul	hit hill, human error + F77			1	
06/09/2004	UH-60L	96-26695	2-25th Avn Regt, US Army	near Deh Redwood	hard landing	minor damage			
12/10/2004	Mi-8		UN	Badakhshan Province	engine failure				crew rescued
20/10/2004	HH-60G	87-26014	66th RQS, USAF	??	brown-out				
04/11/2004	F-16Am	J-637	312 Sqn, RNLAf	Ganci AB, Manas, Kyrgystan	undercarriage collapse on landing				
27/11/2004	CASA-212		AWS/Blackwater	Baba Mountain	hit mountain	destroyed	6		
16/12/2004	OH-58D	96-0033	C Troop, 3-4th Cav, US Army	Shindand, Heart Province	accident			2	
30/12/2004	B-1B		28th BW, USAF	Diego Garcia	undercarriage + F25 collapse				

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
2005									
06/04/2005	CH-47D	88-0100	F-5-159th Avn Regt, US Army	FOB Orgun-E Kalan, 5 km from Chanzi	brown-out		18		
29/04/2005	CH-47D	88-0103	F-5-159th Avn Regt, US Army	FOB near Bagram AB	engine fire	repaired after heavy landing			
22/06/2005	U-2S	80-1082	380th ERS, USAF	30 km from Al Dhafra, UAE	broke up in mid air after technical problem		1		
24/06/2005	AH-64D	99-5101	B-2-6th Cav, US Army	east Kandahar + E40	power problems	damaged after hit round			
28/06/2005	MH-47D	89-00146	B-3-160th SOAR, USAF	Shurak, Kunar Province	RPG fire on HLS	written off	17		
27/07/2005	CH-47D	D-105	298th Sqn, RNLAf	Spin Boldak,	brown-out	written off in fire			
29/07/2005	AH-64	00-5179	A Troop, 2-6th Cav, US Army	near Bagram	crash during night flying exercise		2		
06/08/2005	C-17A	10196	437th AW, USAF	Bagram AB	overran runway	repaired on site			
17/08/2005	AS 532 UL	ET-659	BHELMA-IV, Spanish Army	near Heart	evasive action to hostile fire, hit ground		17		
17/08/2005	AS 532 UL	ET-657	BHELMA-IV, Spanish Army	near Heart	hard landing after above incident			5	
25/09/2005	CH-47D		D-113th Avn Regt, US Army	Dan Chopan, Zabul Province	hostile fire	written off	5		
07/10/2005	MH-47D	89-0160	B-3-160th SOAR US Army	Kunar Province	engine failure	written off	3		
22/10/2005	UH-60		TF Storm, US Army	Oruzgan Province	hit ground while avoiding enemy fire			3	
14/10/2005	Harrier GR7	ZD408	3 Sqn, RAF	Kandahar Airfield	hit on ground by Taliban rocket fire	repaired on site			
14/10/2005	Harrier GR7	ZD469	3 Sqn, RAF	Kandahar Airfield	hit on ground by Taliban rocket fire	repaired in UK			
31/10/2005	CH-47D	D-104	298th Sqn, RNLAf	40 km south Bagram	Taliban rocket fire flew into ground, human error	written off	3		

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
11/11/2005	Il-76		Pakistan Royal Airlines	30 km north-west	accident?		8		
04/12/2005	CH-47D	90-0200	D-113th Avn Regt, US Army	Kabul FOB near Tarin Kowt	RPC fire	repaired on site		1	
04/12/2005	CH-47D	91-0269	D-113th Avn Regt, US Army	north Kandahar	hostile fire	written off		5	
04/12/2005	CH-47D		D-113th Avn Regt, US Army	north Kandahar	hostile fire	minor damage RTB			
2006									
24/12/2006	An-26		Leased to US State Dept/DEA	Lashkar Gar/BOST Airfield	avoiding truck on landing	severely damaged	4		
28/04/2006	AH-64A		R Troop, 4-278th ACR, US Army	Qalat, Zabul province	hard landing	severely damaged		2	
30/04/2006	AH-64D	Q-01	301 Sqn, RNLAf	Kandahar Airfield	blown over by jet wash from Il-76	seriously damaged, repaired			
05/05/2006	CH-47D	85-24349	B-3-10th Avn, US Army	near Asadabad, Kunar province	rolled over in wind on landing zone	w/o, wreckage recovered	10		airfield closed for five days
08/05/2006	B-1B	86-0132	9th EBS, 7th BW, USAF	Diego Garcia	undercarriage not lowered before landing	repaired on site			
24/05/2006	C-130K/C-1	XV206	47 Sqn, RAF	Lashkar Gar/BOST Airfield	hit mine	w/o after fire			all crew + passengers, including UK Ambassador safely exited aircraft
May or June	Chinook HC2	ZA675	RAF	Helmand Province	hard landing	returned to UK for repair			
02/07/2006	AH-64A		R Troop, 4-278th ACR, US Army	near Kandahar Airfield	???		1	1	
09/07/2006	AH-64D		301 Sqn, RNLAf	near Tarin Kowt	enemy fire	returned to base			
11/07/2006	MH-47E	91-00497	2-160th SOAR, US Army	near Sangin	technical problem	later destroyed by air strike			
26/07/2006	Mi-8MTV	YA-TAD	Afghan Sp Narconics Force	Paktika province	hit mountain		16		
31/08/2006	F-16AM	J-364	312 Sqn, RNLAf	Chazni province	??	written off	1		

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
26/09/2005	KC-135R	63-8886	376th AEW, USAF	Manas Airport, Kyrgyzstan	hit by Tu-154 airline	aircraft catch fire, engine ripped off	1		
02/09/2006	Nimrod MR2	XV230	Kinloss Wing, RAF	over Kandahar	fire	aircraft explode in mid air	14		
06/11/2006	UH-60L	90-26267	B-2-10th Avn, US Army	Kabul Airport	rotor hit container	repaired on site	8		
28/11/2006	Mi-26T	RA-29112	Vertikal/Dyncorp	north of Kandahar	enemy fire?	written off			
2007									
18/02/2007	MH-47E	92-00472	2-160th SOAR, US Army	Shah Jai, Zabul province	loss of power	destroyed in site	8	14	
20/03/2007	F/A-18C		VMFA-323, USMC	North Arabian Sea	accident	sunk			pilot rescued by HH-60
04/04/2007	B-1B	86-0116	28th BW, USAF	Al Udeid AFB	caught fire	written off			
29/04/2007	HH-60H	91-26401	33 ERQS, USAF	102 km north Kandahar	brown-out	flown out to Tarni Kowt			
18/05/2007	AH-64D		US Army		hard landing	serious damage	7		
30/05/2007	CH-47D	86-01644	B-3-82 Avn, US Army	nr Kajaki, Helmand province	RPC fire	written off			
31/05/2007	AH-64D	01-05252	US Army		tail rotor fault	serious damage		??	
10/08/2007	CH-47D	83-24123	B-3-82nd Avn Regt, US Army	??	collided with other helo				
13/08/2007	AH-64D		US Army		crash in bad weather	written off			
14/08/2007	AH-64D		US Army		crash into mountain	serious damage			
21/08/2007	AB212		21 Gruppo, Italian AF						crew rescued by French CSAR
26/08/2007	B-1B	86-0133	9th EBS, US Army	over Afghanistan	engine fire	emergency landing at Al Udeid?			
27/08/2007	C-130K/C.1	XV205	47 Sqn, RAF	airstrip near Kabul	heavy landing	destroyed on site			
29/08/2007	u/I helo		US	Kamdish, Nuristan province	hit by RPG				
25/09/2007	AS332B	803-6	803 Sqn, Spanish AF	??	hard landing	destroyed on site			
25/07/2007	CH-53G			northern Afghanistan	crash-landed	destroyed on site			
07/10/2007	AH-64D		301 Sqn, RNILAF	Urzgan province	hostile fire	return to base OK			

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
07/10/2007	AH-64D		301 Sqn, RNLAf	Urzgan province	hostile fire	return to base OK			
25/11/2007	CH-47D		US Army	Helmand province	damage u/c on landing	fly away			
05/11/2007	Nimrod MR2	XV235	Kinloss Wing RAF	near Kandahar	AAR probe breaks	divert to Kandahar for repair			
07/12/2007	AH-46D		82nd Avn Regt (US Army)	Musa Qalah, Helmand	small arms fire, forced landing				
2008									
12/05/2008	u/1 helo		US Army	Nuristan	hard landing after hit by ground fire				
17/05/2008	Chinook HC2	ZD575	RAF	Musa Qalah, Helmand	hit by RPG and 100 x rounds SA	return to Lashkar Gar	2		
05/06/2008	OH-58D(I)	94-00063	2-17th Cavalry, US Army	Kandahar					
02/07/2008	UH-60		US Army	Logar province	hit by RPF, crew land	wreckage destroyed by helo fire			
04/08/2008	C-130H	sr 12-12	UAE AF & AD	Kabul Airport	run off runway	written off		1	
11/08/2008	UH-60		US Army	Tarin Kowt	brown-out			3	
24/08/2008	Mi-8MTV	911	leased by ISAF, by Asia Tourism	FOB Vegas, Kunar province	hit by RPG fire	written off	1		
25/08/2008	u/1 helo		US Army	Sabari-Khost	tail rotor hit ground				
04/09/2008	Apache AH.1	ZJ177		FOB Edinburgh, Musa Qalah	rolled over on landing cat 4 damaged, returned to UK, written off		2		
11/09/2008	OH-58D(I)		C-2-17th Cavalry, US Army	FOB Nagil	hostile fire	written off	1		
15/10/2008	F-16AM	J-144	RNLAf	Kandahar	undercarriage collapse on take-off				
20/10/2008	P-3C	158573	VPU-1, US Navy	Bagram AB	overran runway	written off after fire			
27/10/2008	UH-60		US Army	Wardak province	hit by ground fire	wreckage recovered			
15/12/2008	SA330J	N602R 'PS'	EP Aviation	??	run off landing pad at FOB			1	
03/12/2008	C-17A	Jul-72	60 AMW, USAF	Kandahar	run off runway				
23/12/2008	C-17A		315 AW, USAF	Kandahar	run off runway				

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
2009									
16/01/2009	HH-60G		101/106 RQS, USAF	near Kabul	crash during medevac	written off	1		
17/01/2009	CH-47F	05-08012	7-10st Avn, US Army	karengal, Kunar province	hit by RPG and ground fire, forced landing				
30/01/2009	C-17A	96-0002	437 AW, USAF	Bagram	undercarriage failure				
08/05/2009	C-17A		USAF	Kandahar Airfield	engine fire, due to pilot error				
14/05/2009	Harrier GR9	ZG478 '6B'	RAF	Kandahar Airfield	hard-landing,pilot eject	written off	1	1	
27/05/2009	AH-64D		1-82nd Avn Regt, US Army	Tarin Kowt	crash				
06/07/2009	CH-146		Canadian Forces	FOB in Zabul province	hit building on take-off		3		
14/07/2009	Mi-26		Pectox-Air	??	shot down		6		
18/07/2009	F-15E	90-0231	336th FS, USAF	Ghanzi province	hit ground, human error	written off	1	1	
19/07/2009	Tornado GR4	ZA559 '049-	12 Sqn, RAF	Kandahar Airfield	fire on landing	cat 3 damage, returned to UK	13	5	
19/07/2009	Mi-8	RA-25831	Vertical-T, leased to ISAF		crashed on take-off				
20/07/2009	Tornado GR4	ZA596 '062'	12 Sqn, RAF	Kandahar Airfield	crashed on take-off	written off, crew eject			
31/07/1900	Mi-24V Hind E		Polish Army	Ghanzi province	engine fire, after hit by ground fire				
06/08/2009	AH-1W		HMLA-169, USMC	southern Afghanistan	crash	destroyed by A-10 strike			
19/08/2009	Chinook HC2	ZA709	RAF	near Sangin	hit by ground fire, forced landing	caught fire, written off			
25/08/2009	F/A-18C	164668	VFA-113, USN	Kandahar Airfield	emergency landing after fire	destroyed on site			
30/08/2009	Chinook HC2	ZA673	RAF	near Sangin	hard landing				
13/10/2009	C-12		US Army	Nuristan province	crash?	recovered by Vertical-T Mi-26	3		
13/10/2009	CH-47F	sr 08-08042	B-3-82 Avn Regt, US Army	Sangin valley	hard landing	destroyed on site			
17/01/2009	UH-60		US Army	Nuristan province	hard landing during CSAR for C-12				

Date	Type	Serial	Unit	Location	Cause	Result	Killed	Injured	Other Info
25/10/2009	MH-47G		3-160th SOAR, US Army	Badghis, western Afghanistan	brown-out		10	26	
26/10/2009	AH-1W	165333	HMLA-367, USMC	Helmand province	mid-air collision		2		
26/10/2009	UH-1N	159160	HMLA-169, USMC	Helmand province	mid-air collision		2		
24/11/2009	Mi-8		Airfreight Gulf	Logar province	bad weather		3		
03/12/2009	Mi-24V Hind E		Polish Army	Ghanzi Airfield	accident on take-off			2	
2010									
11/01/2010	u/1 helo			Helmand province	hard landing				
03/02/2010	u/1 helo			Kandahar Airfield	rotor hit vehicle				
23/02/2010	u/1 helo		Turkish Army	Wardak province	technical	emergency landing		2	
24/03/2010	u/1 helo		civilian helo contracted to US DOD	near Kunduz	hit by small arms fire	emergency landing			
09/04/2020	CV-22		8th SOS, USAF	near Qalat, Zabul province					

Operation Enduring Freedom –
Air Order of Battle, September to December 2001

Shamsi, Pakistan

Airbase	Wing/Unit /Service	Aircraft Type	Number Airframe	Squadron/Battalion	IOC	Notes
Pasni, Pakistan Dalbandin, Pakistan Quetta, Pakistan Diego Garcia, BIOT	US Navy	SH-3, CH-53, C-2		Shore Det		
	160th SOAR, US Army	UH-60		CSAR Det		
	160th SOAR, US Army	UH-60		CSAR Det		
	40th AEW, USAF	B-52H	10		Sep-01	
	462nd AEG, USAF	KC-135R		28th EARS	Sep-01	
	60th AEW, USAF	KC-10A	12		Sep-01	
	509th BW, USAF	B-2A	1		Sep-01	
	28th AEW, USAF	B-1B	8	9th, 34th, 77th BS	Oct-01	
	RAAF	F//A-18	4	77 Squadron	Sep-01	
		B-707	2		Sep-01	
Masirah, Oman	USN	P-3C AIP	3	VP-4, 9		
	USN	P-3C AIP	4	VP-4/9	Sep-01	
	16th SOW, USAF	MC-130H			Oct-01	
		EC-130E		193rd SOS	Oct-01	
		AC-130	3		Oct-01	
Thumrait, Oman	405th AEW, USAF	B-1B	8	9th, 13th, 28th, 34th, 77th, 128th	mid Dec 01	
		E-3C			Sep-01	
		KC-135R			Sep	
	RAF	C-130K		8 Squadron		
Seeb, Oman		E-3D		47 Squadron		
		C-130K		12th RS	Sep-01	
	9th RW, USAF	U-2	2	39 Squadron	Sep-01	
	RAF	Canberra PR9		Kinloss Wing	Sep-01	
Al Dhafra, UAE		Nimrod MR2	2		Sep-01	
		Nimrod R1	1	51 Squadron	Sep-01	
	380th AEW, USAF	RQ-4A			Oct-01	
		KC-10A			Oct-01	
Al Udeid, Qatar		U-2		12th RS	Nov/Dec 01	
	379th AEW, USAF	KC-135R		905th, 912th ARS	Sep-01	
		KC-10A		44th ARS	Sep-01	
		F-8			Oct-01	
Al Jaber, Kuwait	322nd AEW, USAF	F-15E	12	391st FS	late Oct	replaced by 335th FS

Airbase	Wing/Unit /Service	Aircraft Type	Number Airframe	Squadron/Battalion	IOC	Notes
Muharraq, Bahrain	RAF	F-16C	12	389th FS/419th FW		
		VC-10	4	10, 101 Squadrons	Oct-01	
	USN	Tristar	2	216 Squadron	Sep-01	
		P-3C AIP	5	VP-4/9	Sep-01	
Shaikh Isa AB, Bahrain	15th MEU (SOC), USMC	EP-3		VQ-1/2	Sep-01	
		KC-130R	6	VMGR-352	Oct-01	
US European Command AOR						
Incirlik AB, Turkey	352nd SOW, USAF various	MC-130H			Sep-01	
		C-17			Sep-01	
Burgas Airport, Bulgaria Ramstein, Germany	various	KC-135R	6	35st ARS	Sep-01	
		C-17A			Sep-01	

Appendix 3

USN and USMC Embarked Aviation – Operation
Enduring Freedom 2001

		USS Enterprise	USS Carl Vinson	USS Theodore Roosevelt	USS Kitty Hawk	USS John C. Stennis
USB						
Cruise Dates		13 Sept to 23 Oct 01	Sept 12 to 16 Dec 01	17 Oct to 3 Mar 02	12 Oct to 12 Dec 02	17 Dec to 18 Apr 02
Type Squadron	Aircraft					
Fighter Squadron (VF)	10 X F-14B	211 (F-14A)	213	102		211 (F-14A)
Fighter Squadron (VF)	10 X F-14B					
Strike Fighter Squadron	12 x F/A-18C	15	97 (F/A-18A)	VFMA-251	195	VFMA-314
(VFA)						
Strike Fighter Squadron	12 x F/A-18C	87	22	82	27	146
(VFA)						
Strike Fighter Squadron	12 x F/A-18C		94	86	192	147
(VFA)						
Tactical EW Squadron	4 x EA-6B	141	135	137		138
(VAQ)						
ASW Squadron (VS)	8 x S-3B	24	29	32	21	33
AEW Squadron (VAW)	4 x E-2C	124	117	123		112
Helicopter ASW Squadron	4 x SH-60F,	3	6	11	14	8
(HS)	2 x HH-60H					
Helicopter ASW Squadron	SH-60B					
(HSL)						
Logistic Support Squadron	2 x C-2	40 Det 5	30 Det 3	40 Det 2	30 Det 5	40 Det 4
(VRC)						

USMC Aviation Task Force 58

15th MEU (SOC) – USS Peleliu Amphibious Ready Group

HMH-163 (Reinforced)

12 × CH-46E

4 × CH-53E

3 × UH-1N

4 × AH-1W

6 × AV-8B

2 × KC-130R (ashore)

24th MEU (SOC) – USS Baatan Amphibious Ready Group

HMH-264 (Reinforced)

12 × CH-46E

4 × CH-53E

3 × UH-1N

4 × AH-1W

6 × AV-8B

2 × KC-130R (ashore)

TF58 reinforced by 4 × CH-53E and 2 C-130R

Appendix 4

ISAF Air Order of Battle Afghanistan, April 2010

Airbase	Wing/Unit/Service	Aircraft Type	Number	Airframe	Squadron/Battalion
Bagram Airfield	455th AEW, USAF	F-15E	12		494th EFS
		A-10A	12		74th E5EFS
		F-16C	12		34th EFS
		C-130H/J			774th EAS
		HH-60H			33rd ERQS
		MC-12C			4th ERS
		EC-130			41st EECs
		MQ-1/9			62nd ERS
		EA-6B			VMAQ-1
		IAI Harfang			Adour Squadron
		AH-46D			1st Bn, 3rd Avn Regt
		CH-47D/F			2nd Bn, 3rd Avn Regt
		UH-60L			3rd Bn, 3rd Avn Regt
		OH-58D			3-17 Cavalry
		King Air 300			TF Odin
		RC-12			TF Odin
FOB Chapman, Khost	US Army	Mi-171ShM	3		
		MQ-1			3rd SOS
		MQ-1			
		AH-64D, UH-60, CH-47			Task Force 3rd CAB
	Czech AF				
		USAF			
		CIA			
		US Army			

Airbase	Wing/Unit/Service	Aircraft Type	Number Airframe	Squadron/Battalion
Kandahar Airfield	451st AEW, USAF	A-10C	12	104th EFS
		MQ-1/9/170		62nd ERS
		C-130J		772nd ERS
		MC-12C		361st ERS
		HH-60H		41st ERQS
		C-27		538th AEAS
		Tornado GR4		II Squadron, RAF
		C-130J		30/70 Squadron, RAF
		MQ-9		39 Squadron, RAF
		Shadow R1		5 Squadron
	HF(A) JSEAW French Air Force RNLAF BEAF RNLAF Canadian JTF-Afg Air Wing	Sea King HC4	2	845/846 NAS
		Chinook HC2		7 Squadron, RAF
		Lynx AH.7		657 Squadron, RAF
		Rafale		
		Mirage 2000		
		F-16		
		F-16		
		AS52US		300 Squadron
		CC-130		
		CH-146		
Kamp Holland, Tarin Knot	RAAF Australian Army Aviation 82nd Combat Aviation Brigade, US Army	CH-147	2	5th Aviation Regiment
		CU-161 Sprewer		1st Bn, 82nd Avn Regt
		CH-170 Heron		3rd Bn, 82nd Avn Regt
		Heron		2nd Bn, 82nd Avn Regt
		CH-47D		1-17 Cavalry
		AH-46D		
		CH-47D/F		
		UH-60L		
		OH-58D		
		RC-12N		
	RNLAF US Army	AH-64D	4	301 Squadron
		AH-64D, UH-60, CH-47		Task Force 82nd CAB

Airbase	Wing/Unit/Service	Aircraft Type	Number	Airframe	Squadron/Battalion
Bastion Joint Operating Base	903rd EAW, RAF JHF(A)	C-130J	10		30/70 Squadron
		Apache AH.1			664 Squadron, AAC
		Chinook HC.2	8		18/27 Squadron, RAF
		Sea King ASaC.7	2		857 NAS
		Merlin HC.1	6		28/78 Squadron, RAF
		Lynx AH.7	4		9 Regiment AAC
	32 Regt RA 3rd MAW (Fwd), USMC	Hermes 450	14		18 Battery
		AV-8B			VMFA-231
		AH-1W/UH-1Y			HMLA-369
		MV-22			VMM-261
		CH-53D			HMM-363
		CH-53E			HMH-466
Kabul International Airport	451st, EOG, USAF	KC-130J	4		VMGR-352
		RQ-7			VMU-3
		HH-60H			Det 66th ERQS
	455th AEW Op Location Alpha, USAF US State Department Air Wing French Army Light Aviation	BT-67	2		
		Tiger	3		
		AS532	2		2/5 RHC
Mazar-e-Shariff	French Air Force	Gazelle	3		5 RHC
		EC725	3		EH 1/67
	German Luftwaffe	Tornado Recce			AKG 51
		IAI Heron			AKG 51
		C-160			
		CH-53G			
Herat	German Army	RQ-1	3		Task Group Astore
		AMX	4		Task Group Black Cats
	Italian Air Force	C-27J	2		Task Group Albatros
		C-130J	1		Task Group Albatros
		AB-212ICO			Task Group Tigre

Airbase	Wing/Unit/Service	Aircraft Type	Number	Airframe	Squadron/Battalion
Farah	Italian Army Aviation	CH-47 AW-129	4 to 6 4 to 6		Task Group Fenice Task Group Fenice
Herat	Spanish Army Aviation	AB-412 AS332	4 to 6 2		Task Group Pantera
Ghazni	Polish Army	AS352 Mi-24 M-17AE/V-1	3 4 8		25th Air Cavalry Brigade 25th Air Cavalry Brigade
<i>Supporting Units outside Afghanistan</i>					
Manas, Kyrgyzstan	US Transit Center				
Seeb, Oman	USAF French Air Force 902rd EAW, RAF	KC-135R KC-135 Sentinel R.1 ASTOR VC-10 HS-125 U-2	1 2 2		22nd EARS 1/7 Provenge 5 Squadron 101 Squadron 32 Squadron 99th ERS 908 EARS 965th EACCS 37 Squadron 10 & 11 Squadron 340th EARS 7th EACCS 12th ERS 763rd ERS 379th EAS 746th EAS 37th EBS
Muharraq, Bahrain Al Dhafra, UAE	902rd EAW, RAF 380th AEW, USAF	KC-10 E-3A C-130J AP-3C KC-135R E-8 JSTAR RQ-4 RC-135 C-130H C-130J B-1B P-3C AIP C-130J E-3A	3 2		
Minhab, UAE	JTF 633, RAAF				
Al Udeid, Qatar	376th AEW, USAF				
Konya, Turkey	USN 901st EAW, RAF NAEW&CF		8 1 2		30/70 Squadron, RAF

Appendix 5

US and Coalition Predator and Reaper Losses – Afghanistan/Pakistan Theatre, September 2001 to April 2010

Date	Type	Serial	Unit	Location	Cause	Result
22/09/2001	RQ-1		CIA	Tashqurghan Pass, Samangan Prov	AAA?	wreckage displayed by Taliban
02/11/2001	RQ-1L		57th Wing, USAF	Afghanistan?	icing	
30/12/2001	RQ-4A	98-2005	12th ERS/412th Test Wing	nr Al Dhafra, UAE	technical fault	
21/01/2002	RQ-1K	97-3031	15th ERS	Pakistan?	technical fault	wreckage recovered
25/01/2002	RQ-1		USAF	Afghanistan?	technical fault	wreckage recovered
18/05/2002	RQ-1L	98-3029 WA	11th RS	Karim Bakhsh, Pakistan	technical fault	wreckage recovered
17/09/2002	RQ-1K	96-3024 WA	57th Wing	30 km south Khost	Afghanistan/Pakistan Theatre	
01/01/2003	RQ-1K	96-3029 WA	15th ERS	Bashir Khan Jikrani, Pakistan	technical fault	
20/01/2003	RQ-1		15th ERS	near Jacobabad AB, Pakistan	technical fault	
03/10/2004	RQ-1		321st AEG	3 miles from Jacobabad	technical fault	wreckage recovered
24/11/2004	MQ-1	sr 02-3009	57th Wing	Bagram or Kandahar? In Afghanistan	human error	
02/01/2005	u/1 UAV		CIA?	Afghan-Pakistan border		
14/01/2005	MQ-1L		15th ERS	north-east Kandahar	technical fault	directed to crash
23/02/2007	MQ-1	sr 03-3124	15th RS	96 km north-east Jalalabad	human error	
26/03/2007	MQ-1B	sr 03-3104	62nd ERS	near Kandahar	technical fault	wreckage destroyed by air strike
09/04/2007	MQ-9A	ZZ200	39 Sqn, RAF	southern Afghanistan		class a accident
20/08/2007	MQ-1B		US SOCOM	Afghanistan or Pakistan		
29/09/2007	MQ-1		US military?/CIA?	near Miranshah, North Waziristan	technical fault	
17/12/2007	MQ-1B	sr 05-3153	27th SOS	Afghanistan?	Afghanistan/Pakistan Theatre	

Date	Type	Serial	Unit	Location	Cause	Result
12/06/2008	MQ-1B	sr 06-3169	62nd ERS/451st AEG	southern Afghanistan	control failure	
07/08/2008	RQ-7		US Army	Paktika province	crash	
21/08/2008	MQ-1B	sr 05-003135	27th SOS	southern Afghanistan	control failure	
23/09/2008	u/I uav		CIA?	3 km from Afghan border, Jalhal Khel, Pakistan		
23/09/2008	MQ-1		USAF	Paktika province	engine failure	wreckage recovered
02/11/2008	MQ-1B	sr 06-3167	62nd ERS/451st AEG	Kandahar	crash after take-off	
20/11/2008	MQ-1		USAF	Kandahar?		
08/02/2009	MQ-1		3rd SOS	southern Afghanistan		
07/03/2009	MQ-1		CIA?	Angoor Adu, South Wazuristan, Pakistan		
20/04/2009	MQ-1B	sr 98-3047	111th RS Texas ANG	eastern Afghanistan	electrical failure	
08/05/2009	MQ-1B	sr 05-3140	27th SOS	eastern Afghanistan		
13/05/2009	MQ-1B	sr 07-31-83	15th RS	Chanzli, eastern Afghanistan	communications failure	
04/07/2009	MQ-1		USAF	southern Afghanistan		
15/07/2009	u/I Uav		?	Chardare District, near Konduz		
04/09/2009	MQ-1B		3rd SOS	Jalalabad or Khost, eastern Afghanistan		
13/09/2009	MQ-9A		USAF	western Afghanistan	loss control, heading to Iran	shot down by F-15E 335th FS
24/09/2009	MQ-1?		CIA	South Waziristan, Afghanistan		
21/11/2009	MQ-1		USAF	southern Afghanistan		
02/01/2010	MQ-1		USAF	Yusuf Khil, Paktika	technical problem	
15/01/2010	MQ-1		USAF	southern Afghanistan	technical problem	
24/01/2010	u/I UAV		CIA	Handhoni, North Warzirstan, Pakistan	crashed on take-off	
09/02/2010	MQ-1		USAF	eastern Afghanistan	technical problem	
14/03/2010	MQ-1		USAF	southern Afghanistan		

Glossary

AAC:	Army Air Corps (British Army)
AB:	Air Base
ACW:	Air Control Wing (USAF)
AEW:	Air Expeditionary Wing (USAF)
AEG:	Air Expeditionary Group (USAF)
AG:	Air Group (USAF)
AMW:	Air Mobility Wing (USAF)
ANA:	Afghan National Army
ANAAC:	Afghan National Army Air Corps
ANG:	Air National Guard (US)
ARG:	Air Refuelling (USAF)
ARS:	Air Refuelling Squadron (USAF)
ARW:	Air Refuelling Wing (USAF)
AS:	Airlift Squadron (USAF)
ASTOR:	Airborne Stand Off Radar (UK)
Avn:	Aviation (US Army)
AW:	Airlift Wing (USAF)
AWACS:	Airborne Warning and Control System
BEAF:	Belgian Air Force
Bn:	Battalion
BS:	Bombardment Squadron (USAF)
BW:	Bombardment Wing (USAF)
CAB:	Combat Aviation Brigade (US Army)
CAOC:	Combined Air Operations Centre (USAF)
CIA:	Central Intelligence Agency (USA)
CFACC:	Coalition Forces Air Component Commanders (US)
CFLCC:	Coalition Forces Land Component Commanders (US)
CMND:	Canadian Ministry of National Defence

CRG:	Contingency Response Group (USAF)
CSAR:	Combat Search and Rescue
Det:	Detachment
EAW:	Expeditionary Air Wing (UK)
EARS:	Expeditionary Air Refuelling Squadron (USAF)
EBS:	Expeditionary Bombardment Squadron (USAF)
ECS:	Electronic Combat Squadron (USAF)
EFS:	Expeditionary Fighter Squadron (USAF)
EAS:	Expeditionary Airlift Squadron (USAF)
ERS:	Expeditionary Reconnaissance Squadron (USAF)
ERQS:	Expeditionary Rescue Squadron (USAF)
EBS:	Expeditionary Bomber Squadron (USAF)
EACCS:	Expeditionary Airborne Command and Control Squadron (USAF)
ELINT:	Electronic intelligence
EOG:	Expeditionary Operations Group (USAF)
FAC:	Forward Air Controller
FARP:	Forward Arming and Refuelling Point
Flt:	Flight
FG:	Fighter Group (USAF)
FS:	Fighter Squadron (USAF)
FOB:	Forward Operating Base
FW:	Fighter Wing (USAF)
GBU:	Guided bomb unit
HARM:	High Speed Anti-Radiation Missile
HC:	US Navy Helicopter Support Squadron
HCS:	US Navy Helicopter Combat Support Squadron
HMLA:	US Marine Helicopter Attack Squadron, Light
HMH:	US Marine Helicopter Squadron, Heavy
HMM:	US Marine Helicopter Squadron, Medium
HS:	US Navy Helicopter Antisubmarine Squadron
HVM:	High Velocity Missile (UK SAM)
IADS:	Integrated air defence system
ISI:	Inter-Services Intelligence (Pakistan)
JHF(A):	Joint Helicopter Force (Afghanistan) (UK)
JSAF:	Joint Special Forces Aviation Wing (UK)
JTF-Afg:	Joint Task Force-Afghanistan (Canada)
JTAC:	Joint Terminal Attack Controller (US)
LTW:	Lynham Transport Wing (RAF)
MAW:	Marine Air Wing (USMC)
MEB:	Marine Expeditionary Brigade (MEB)
MEF:	Marine Expeditionary Force (USMC)

MEU:	Marine Expeditionary Unit (USMC)
NAEWF:	NATO Airborne Early Warning Force
NATO:	North Atlantic Treaty Organization
NAS:	Naval Air Squadron (UK)
NSA:	National Security Agency (US)
PAF:	Pakistani Air Force
RA:	Royal Artillery
RAF:	Royal Air Force (UK)
RAAF:	Royal Australian Air Force
RDAF:	Royal Danish Air Force
Regt:	Regiment
RNLAF:	Royal Netherlands Air Force
RNOAF:	Royal Norwegian Air Force
RS:	Reconnaissance Squadron (ERS: Expeditionary RS) (USAF)
RW:	Reconnaissance Wing (USAF)
RQS:	Rescue Squadron (USAF)
RQW:	Rescue Wing (USAF)
SAM:	Surface-to-air missile
SAS:	Special Air Service (UK and Australia)
SEAD:	Suppression of enemy air defence
SEAL:	SEa, Air, and Land Team (US Navy)
SLAM:	Stand-off land attack missile
SOAR:	Special Operation Aviation Regiment (US Army)
SOF:	Special Operations Forces (US Army)
SOG:	Special Operations Group (USAF)
SOS:	Special Operations Squadron (USAF)
SOW:	Special Operations Wing (USAF)
Sqn:	Squadron
TACP:	Tactical air control party
TDY:	Temporary duty (US military term)
TF:	task force
TLAM:	Tomahawk Land Attack Missile
USAF:	US Air Force
USMC:	US Marine Corps
USN:	US Navy
UN:	United Nations
USS:	United States Ship
VA:	US Navy Attack Squadron
VAQ:	US Navy Tactical Electronic Warfare Squadron
VAW:	US Navy Carrier Airborne Early Warning Squadron
VF:	US Navy Fighter Squadron

VFA:	US Navy Strike Fighter Squadron
VMA:	US Marine Attack Squadron
VMAQ:	US Marine Tactical Electronic Warfare Squadron
VFMA(AW):	US Marine All-Weather Fighter Attack Squadron
VFMA:	US Marine Fighter Attack Squadron
VMGR:	US Marine Refueling Squadron
VMM:	Marine Medium Tiltrotor Squadron
VMU:	US Marine Unmanned Aerial Vehicle unit
VP:	US Navy Patrol Squadron
VS:	US Navy Antisubmarine Squadron
VQ:	US Navy Fleet Reconnaissance Squadron

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TIM RIPLEY is a correspondent for Jane's Defence Weekly and has covered widely during the recent Middle East wars. He is the author of more than 20 books, including *Air War Iraq*, *Middle East Air Forces* and *16 Air Assault Brigade* published by Pen & Sword.



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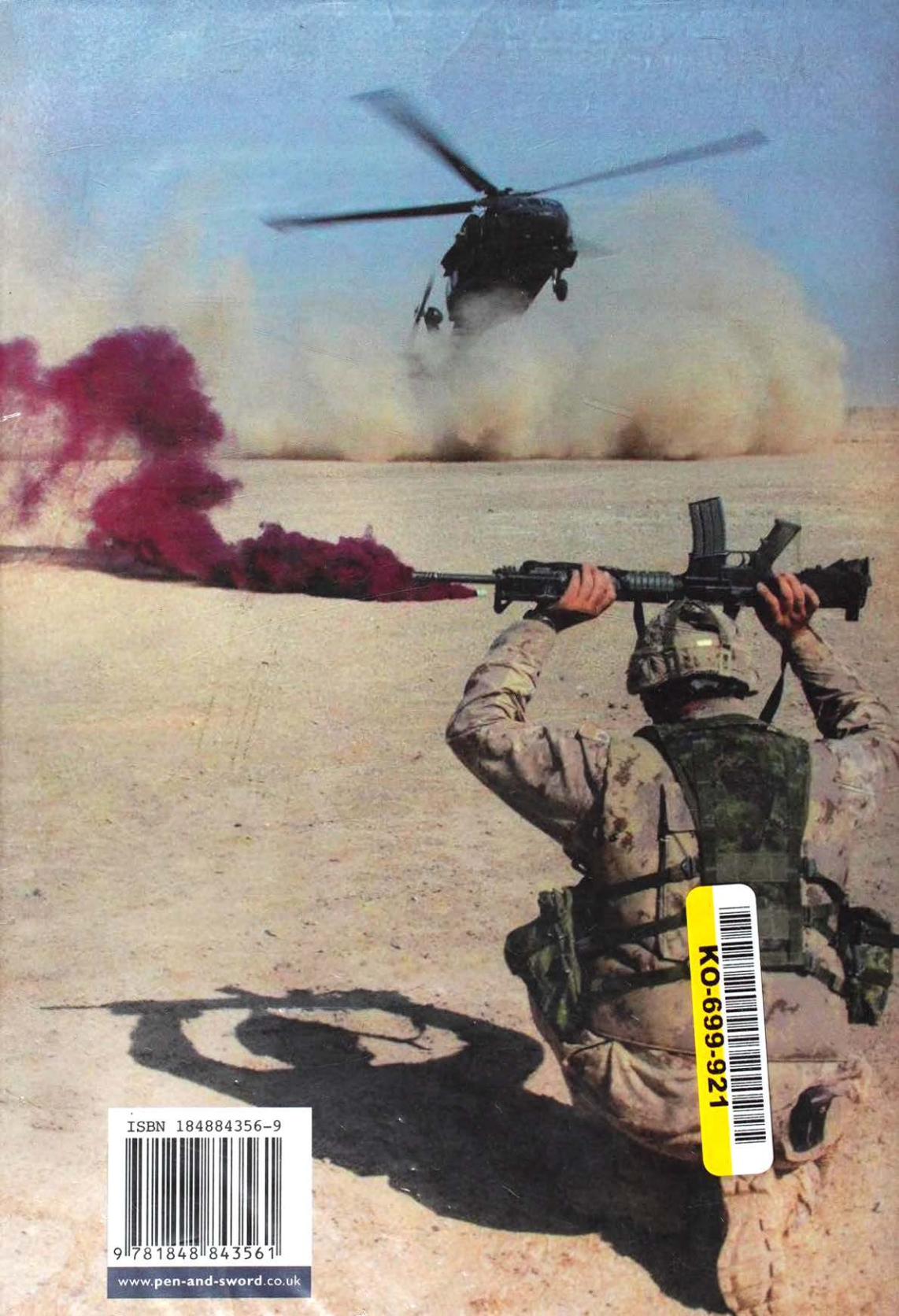
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